MEDICAL INSPECTION OF SCHOOLS

A. H. HOGARTH

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OXFORD : HORACE HART
PRINTER TO THE UNIVERSITY

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MEDICAL INSPECTION OF SCHOOLS

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LONDON

HENRY FROWDE
Oxford University Press

HODDER & STOUGHTON
Warwick Square, E.C.

1909

GENERAL

Οὐκοῦν καὶ ἰατρική, ἔφην, ἐπιστήμη ἐστὶν τοῦ ὑγιεινοῦ ;

PLATO, *Charmides*, 165 C.

We are taught to live when our life is well-nigh spent.
MONTAIGNE.

TO

DR JAMES KERR

THE FIRST 'SCHOOL DOCTOR'

196436

PREFACE

The scope of this textbook is necessarily confined to the needs of elementary schools. The value of medical inspection for secondary schools, to which incidental reference is made in Chapter VI, is equally obvious. In course of time its necessity will be generally admitted.

The chapter on school diseases is intended partly for teachers and educationalists and partly for school doctors, and has consequently been written less from the clinical and medical than from the school point of view. Any attempt to deal more fully with the diseases specified would have exceeded the limits of the present volume.

Acknowledgments are due to many friends for invaluable criticisms and suggestions, but especially to my sister, to Dr. E. M. Niall, and to Mr. L. Cope-Cornford.

Toynbee Hall, Whitechapel.
February, 1909.

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CHAPTER I

INTRODUCTION

Medicine the Science of Health.—Importance of Preventive Medicine not generally Recognized.—Evil Results of Industrial System of Nineteenth Century.—Policy of Laissez-Faire.—Educational Progress more Apparent than Real.—National Bill of Undischarged Obligations.—Mental Deterioration.—Backwardness of England as a Nation.—Is Education the Panacea?—Medical Inspection of Schools the First Step.—Two Courses: (1) Suicidal Policy of Laissez-Faire; (2) Administrative Activity.—Both Courses involve Equal Expenditure.

THE proverbs of every race and country are a national possession, the heritage of succeeding generations. The more fallacious are quoted on all sides with apparent reverence. Others containing germs of truth are neglected. Of such a kind is the maxim that 'Prevention is better than cure'. It is on every one's lips almost from childhood, but its principle—remarkably true—is ignored by all sorts and conditions, the rich and the poor, the educated and the ignorant.

'Medicine', wrote Plato more than two thousand years ago, 'is the science of health'. To-day it is popularly regarded as the science of disease. But had the truth of Plato's dictum been recognized, some Government department of preventive medicine would long ago have been established in our midst; and we should be in the habit of paying for medical attendance only while we were actually maintained in good health.

The truth of the principle that prevention is better than cure is appreciated only in the face of actual and imminent danger, such as the outbreak of cholera or small-pox. In such an emergency nothing is left undone, no expedient is left untried. The preventive measures adopted may even savour of extravagance. But the crisis weathered, our national lethargy resumes its sway. It is thought unnecessary and contrary to precedent to make costly provision for possible, or even for probable, contingencies. And under a form of government theoretically democratic, legislative enthusiasm is not to be anticipated in regard to any principle which is still awaiting general acceptance. Public opinion must first be impressed by solid argument based on substantial facts and common sense. Then progress may be expected.

Here, consequently, is found one reason why public opinion in England, and even the medical profession itself, has for so many years withheld judgment upon the necessity for the medical inspection of school children.

Had the importance of preventive measures been more thoroughly realized, there would have been less delay both in the recognition of the necessity for, and in the institution of, medical inspection. The most superficial physical examination at school undoubtedly tends to prevent much actual ill health, owing to the resultant discovery of disease in its early stages as well as of many simple ailments which might ultimately become serious.

But the general neglect of an essential principle, continued from generation to generation, must involve the inevitable penalty of procrastination. The history of the last hundred years serves to show that the nation is now confronted with a sum of accumulated evils, which are the direct consequences of the industrial system established in the early years of the last century.

Almost a hundred years ago England, released from the strain of perpetual warfare, turned to the development of her rich and virgin resources, and became the workshop of the world. She supplied to other nations the materials wherewith to build afresh the shattered fabric of their civilization. Wherever coal and iron were discovered, huge towns sprang into ugly being, and grew and spread, and there was an immense and sudden increase of population.

The spirit that was born of the Industrial Age was characterized by the greed of gain. It dominated the whole community, alike in politics and in private life. The doctrine of the economists of the Manchester School, known as *laissez-faire*, was accepted as a law of nature; and there was little attempt to check the evils of the industrial system.

It was during the industrial age that children spent the greater part of their days as slave apprentices, that the wrongs of the sweating system were developed to their fullest extent, and that houses and factories were built with the minimum outlay that could secure a quick return for money invested, without any regard

to such immediate requirements of health as were understood at the time.

Among the more obvious results were the continued growth of towns, great aggravation of the original inequality in the distribution of wealth, consequent accentuation of the extremes of luxury and poverty, overcrowding in cities, and all the attendant evils of town life. Above all, there was an enormous increase of population.

England was asleep, asleep to all national needs, except the accumulation of material wealth. No preventive measures were seriously considered. No provision for the future was made, no care or attention was given to the problems of the immediate present, except with a view to the extension of the industrial system. This attitude of the Legislature and of the Government was but a reflection of the apathy and the improvidence of the country at large. In a word, the ideal was individual aggrandizement, involving the loss of individual peace and contentment, and implying the neglect of all other interests. Education was neglected. Medicine was still in its days of darkness. The notable exceptions that can be quoted from the history both of individuals and of legislative effort were by no means in harmony with the spirit of the age.

The Education Act of 1870 marked a beginning of progress. But the influences of the past were still powerful. The newer ideal was overshadowed by the industrial system, by the continual growth of cities,

by apathy and neglect, as well as by ignorance and poverty. The result was that for many years progress was more apparent than real, and was often most marked when tending in a wrong direction.

Towards the close of the nineteenth century, England was brought face to face with the serious problem of a vast aggregate of unfulfilled responsibilities. The sins of the fathers were being visited on the third and fourth generations. The nation realized for the first time not only the misery, the degradation, the poverty, the vice of its people, but the increase of crime and of lunacy, and above all, the neglected health and the neglected education of its children. More advanced opinion was impressed by the urgency of the problem, but the general tendency was to ignore or to underrate its urgency, to seek to gain time—in fact, to put off the day of reckoning as long as possible.

At the beginning of the twentieth century, the same problem confronts us. Are the evils to be allowed to continue and to bequeath an ever-increasing debt to posterity ? Or is there to be some attempt to cancel the debt and to save the wreckage ?

Even apart from the heavy national bill of undischarged obligations, the prospect affords little ground for complacency. Our industrial supremacy may or may not be declining, our race may or may not be degenerating in character and in physique. But, at all events, evidence of serious mental and intellectual deterioration is not wanting. It is a far from encouraging reflection that, at the very time when the nation

is beginning to appreciate its real position, it should apparently have lost the power of vigorous, disinterested, and intelligent action.

To say nothing, for the moment, of mental deterioration, there is little doubt that the general level of education among the people of England is set on a lower plane than that which is observable in Continental countries, though these may be smaller and less prosperous than our own. Evidence of mental and intellectual deterioration is to be found in the national attitude of mind towards the more vital problems of life, towards education, and towards our plain duty to posterity. The English public school ideal is characteristic. It aims at turning out gentlemen and 'good fellows'—who, as Herodotus tells us of the Persian youth, are taught 'to ride and speak the truth'.

To-day, England is living on her reputation. Her people exist for appearances. 'Education is doing its work. To take everything for granted, to grasp fringes and avoid fundamentals, to think only of the obvious',[1]—these are the ideals with which the present generation is inspired.

Another symptom of mental and intellectual deterioration lies in the fact that England as a nation now tends to lag many years behind the development of other countries in most spheres of activity—always excepting those of sport, of pleasure-seeking, and of money-making.

[1] *The Grey World*, by Evelyn Underhill. Heinemann.

What, then, is to be done? Is education the remedy? If so, our educational system must be revised and placed on a scientific basis. Now is the time to lay the foundation of a science of education. Medical inspection of schools and of scholars is the beginning, a long-deferred step in the right direction.

The institution of medical inspection by the Education Act of 1907 must be regarded primarily as an attempt to save wreckage, and only secondarily as a foreshadowing of better things to come. The legislature has at any rate done its part and prepared the way. It rests with our administrators to realize their responsibilities, to rouse public opinion from its lethargy and, by following the spirit rather than the letter of the law, to develop the scheme into a system of prevention. In their efforts both to deal with the legacy of evil accumulated from the past, and to dissipate popular ignorance and apathy, the choice must lie between two possible courses. Both of these, if rightly considered, involve equal expenditure. They are :—

1. A policy of *laissez-faire*.

2. The fulfilment by prudent activity of the maxims: Prevention is better than cure; and Medicine is the science of health.

The first course implies that the sick, ailing, and defective children of the present day and the adults of the next generation will continue to be treated in hospitals, asylums, prisons, Poor Law infirmaries, and convalescent homes. The maintenance of these institutions involves heavy expenditure in rates and in

charities, with little to show for it. For, there has been no attempt to prevent the onset of ill-health, while the ravages of neglected disease continue almost unchecked. Such a policy defeats its own ends.

The second course, which also involves the expenditure of money, is one of reasoned and far-seeing administrative design. It implies the fearless recognition of facts as they are and courageous action. Steps must be taken to prevent the occurrence of disease, not only recognized forms of infectious and contagious disease, but the chronic insidious diseases of childhood. When it is discovered that no remedial treatment is being applied, whether on account of incapacity, poverty, ignorance, or vice on the part of parents, the necessity for some form of municipal treatment must also be considered. In return for this careful administration and for the inconsiderable outlay which is involved—certainly not the cost per annum of one battleship—there will, without shadow of doubt, be secured a higher standard both of physical development and of educational results.

In a word, administrative expenditure of this kind is the soundest economy. Such is the justification of the plea for adequate and efficient medical inspection of schools and scholars as interpreted in the following pages.

CHAPTER II

HISTORY AND LEGISLATION

(1) Historical Review of School Hygiene in its Relation to Education.—Schools of Hellas.—Rabelais.—Montaigne.—Ascham.—Mulcaster.—Comenius.—Locke.—Rousseau.—Basedow.—Gutsmuths.—Pestalozzi, Herbart, and Froebel.—Backwardness of England.—Progress in Sweden, Germany, France, and other Countries.—Scientific Investigations by Medical Men abroad and in England.—Health Inspection and School Hygiene Confused.—Inactivity of Education Department.

(2) Review of Legislative Efforts in different Countries.—Austria.—France.—Argentina.—Norway.—Sweden.—Japan.—Switzerland.—Germany.—United States.—Russia and Bulgaria.—Municipal Enterprise.—Summary.—International Congress of School Hygiene.—Legislation in England.—Education (Administrative Provisions) Act, 1907.—No Preparation by Central Authority.—Present Organization the Outcome of Sporadic Impulse.

(1) History

In the schools of Hellas, at least one aspect of school hygiene, namely, physical education, was recognized as a means of developing the ideal citizen—the true function of education. The training of the body was regarded as of equal importance with the training of the mind. But in the Greek world physical education was a reality. It did not consist of a systematized code of physical exercises, nor of a course of physical training imposed at set times. It was a natural education of the child's body, directed partly to securing healthy growth and development of good physique, and partly to creating a favourable reaction upon the

child's mental and moral activities. 'Man,' to quote Mr. Freeman, 'was a whole to the Hellenes, and one part of him could not be sound if the other parts were not. A national school which trained the minds only and neglected the bodies of the pupils would have been inconceivable to a Hellene'.[1]

Since early Grecian times, there has been no adequate system of national education. Study of school hygiene has been confined to a few advanced thinkers and educationalists. Of these, Roger Ascham, Richard Mulcaster, and John Locke were the first in England. But earlier in the sixteenth century Montaigne, following closely in the steps of Rabelais, had discovered the necessity for teaching temperance and hygiene, and had recognized how seldom, owing to their unsatisfactory upbringing, the young men of France fulfilled the promise of their childhood.

A generation or so later, Comenius—the father of modern education—evolved an educational system, in which school hygiene certainly found a place. He constantly urged the necessity for physical training, and emphasized the importance of providing 'airy schoolrooms and pleasant playgrounds'. He insisted that educational methods should be in accordance with Nature, and was the first to establish a practical system of objective instruction. Moreover, he was fully aware of the importance of adapting the school

[1] *Schools of Hellas*: 600–300 B.C., by Kenneth T. Freeman. Macmillan & Co., 1907.

routine and curriculum to the physical and mental needs of the children. Comenius won a far-reaching reputation, and visited England, Sweden, and many parts of Central Europe for the purpose either of reforming the systems of education which were in vogue at the time, or of introducing his own.

Towards the end of the seventeenth century John Locke published his *Thoughts concerning Education*, which was the first attempt in England to treat the subject in a broad and comprehensive manner. Owing to his study of politics and philosophy as well as of medicine, the author was able to view education in its right perspective, to consider the subject as a whole, and to lay down rules not only for mental and moral but also for physical training. Locke was the founder of school hygiene in the true sense of the term. For he had combined the duties of physician and pedagogue in a practical way; he was also a psychologist endowed with some knowledge of the growth and development of a child's mind and with practical insight into a child's mental processes.

Among the educationalists of the eighteenth century Rousseau is pre-eminent as a theorist. His influence was due to his accurate observation of child life, which enabled him to teach his lesson and to lay the foundation of one branch of school hygiene. Basedow, about the same time, originated an educational system which contained some germs of truth, but he experienced great difficulty in the practical application

of his scheme. However, it was due to his influence that a little originality was introduced into the dreary methods of physical training which prevailed at that time in Germany. His insight into children's physical and educational needs was probably a consequence of his early training as a doctor. Gutsmuths was the first of modern educationalists to pay any special attention to physical training. His work *Gymnastik für die Jugend* was published in 1793 and long remained the basis of all systems of physical education.

These ideas and suggestions stimulated educational activity on the Continent, and probably influenced the methods and teachings of Pestalozzi, Herbart, and Froebel. In England, they fell on barren soil.

There was certainly no room for school hygiene at a time when the children of the poor spent the greater part of their days as slave apprentices. Public feeling at the beginning of the nineteenth century may be gauged from the fact that, in 1803, both manufacturers and parents successfully petitioned against the enforcement of the Factory Act of the previous year—an Act which merely proposed a primitive scheme for safeguarding the health and morals of apprentices in mills and factories, and for instructing them during their first four years of apprenticeship (generally speaking from 7 to 11 years) in reading, writing, and arithmetic.[1] The provisions of the Act were never enforced, and an evil state of affairs continued for many years.

[1] *The Progress of Education in England.* Montmorency, 1904.

There is indeed no record[1] of interest in educational hygiene till the close of the nineteenth century, and even then advanced educationalists had lost sight of its importance, owing to their absorption in theoretical discussions upon the various methods and comparative merits of Pestalozzi, Herbart, and Froebel.

Abroad, however, school hygiene claimed a few isolated apostles,—not among educationalists, but among those more enlightened members of the medical profession who interested themselves in the schools.

First was Peter Frank of Austria, who studied the subject of school fittings and sanitation and suggested a complete scheme of medical police. Then came Peter Henrik Ling, the founder of physical education in Sweden. He was born a poet, but applied himself to the study of anatomy, physiology, and hygiene, with the idea of organizing a scientific system of physical training. In 1813, the Government formally adopted his system and established a Central Gymnastic Institution at Stockholm under his direction. Here Ling devoted his life to ' training a generation of teachers through whom he hoped knowledge of his system might gradually be spread throughout Sweden '.[2] As a result of these new ideas of hygienic training, medical men were attached to the staff of some of the secondary

[1] It is interesting to note that at this very time (1803–12) John Ware, of Chelsea, called attention to the relation between eyesight and educational pursuits.

[2] *The Organization of Physical Training in Sweden.* Board of Education Pamphlet. No. 11.

schools as early as 1830, and were responsible for a reduction in the amount of school lessons. But there is little record of their work until their duties were prescribed by statute in 1868.

Apart from physical training, Dr. Karl Lorinser was the first medical man to make a thorough study of school hygiene. In 1836, he published a pamphlet, *Zum Schutze der Gesundheit auf Schulen*, in which he attacked the educational system and pointed out that the long school hours, the subjects taught, and the school management generally, were largely responsible for deterioration of the children's health. This created a great stir in Germany, and led to the general admission that school hygiene was a subject for special and thorough study. In 1842, Dr. Seguin published a book, *Le Traitement moral, hygiène et éducation des idiots*, which marked a great educational advance in the field of school hygiene. It is the first practical differentiation of educational methods for idiots ; and it was soon followed, even in England, by the establishment of a number of institutions for the education of the feeble-minded.

In England, for the most part, the health of the school child and the hygiene of educational methods received no attention. The children, coming as they did from well-to-do homes, were not considered to be in any need of health inspection. Cleanliness was essential. For instance, in 1823–30 at the Borough Road School, ' a dirty arrival would be washed by a girl sent from the other (girls' school), to our amuse-

ment '.[1] Gradually the habit of school attendance became more general among the poorer classes. In 1803 only 1 in 21 of the population attended school, in 1820 the proportion was raised to 1 in 16, while in 1833 Parliament voted £20,000 for the erection of schools for the poorer classes. In 1857, however, only 27 per cent. of children in attendance were over eleven years of age and only 36 per cent. earned a capitation grant.[2]

The Education Act of 1870 changed all this. Every child was brought under the cognizance of the State. But so imbued were educationalists and legislators at that time with the one idea that every child should be taught reading, writing, and arithmetic, that little consideration was given to physical training, and the bodily needs of the community were neglected. For twenty years after the institution of compulsory school attendance, no need for any medical advice was recognized officially either by central or local authorities. During this time, however, many observations which have since proved the basis of further inquiry were made by medical men both in England and on the Continent.

Of these Cohn of Breslau was the first. He had been an army surgeon during the Prussian War of 1866, and had observed defective vision among the soldiers. About the same time he turned his attention to the schools of Breslau and published his famous report upon the eyesight of 10,000 school children. His investiga-

[1] *An Octogenarian's Reminiscences*, by Mr. James Bonwick, 1902.
[2] *The Progress of Education in England*, 1904. Montmorency.

tions gave rise to much speculation in Germany and elsewhere, and as a result medical inspection of schools was advocated in 1869 by Virchow, and discussed in that year at the Scientific Congress at Innsbruck. Later Cohn himself drew up a scheme of duties for school physicians which was first considered at the International Congress of Hygiene at Geneva in 1883.

Meanwhile other investigations were pursued. In 1875 Professor Bowditch recorded the measurements of height and weight of 25,000 school children in Boston. In 1881 Hertel of Copenhagen began an extensive inquiry into the conditions of school life. A year later, as a member of a Danish Commission, he reported that, of 16,000 children examined in both primary and secondary schools, 29 per cent. were unhealthy. He also investigated the subject of over-pressure in the High Schools. In 1884 a Royal Swedish Commission was appointed to investigate health conditions in school. On their behalf, Professor Axel Key examined 18,000 children in several countries and published a report upon the growth and development of boys and girls at different age periods. He also, like Hertel, discovered that a large proportion—approximately 35 per cent.—of children were suffering from chronic physical defects such as anæmia, headache, and short sight.

Table showing Percentage, according to Age and Grade, of Physically Defective Children in Swedish Schools.

	General Schools.			*Latin Schools.*					
Grade.	I	II	III	IV	V	VI_1	VI_2	VII_1	VII_2
Average age .	11·3	12·3	13·4	14·3	15·4	16·5	17·4	18·3	19·4
Short sight .	3·2	2·4	5·2	6·5	8·9	15·0	14·1	17·6	21·6
Other defects .	34·4	37·6	38.0	37·4	36·6	34·7	38·6	40·5	36·9

Modern High Schools.

Grade.	IV	V	VI_1	VI_2	VII_1	VII_2
Average age .	14·6	15·7	16·6	17·6	18·7	19·5
Short sight .	5·2	8·3	12·2	8·1	14·8	11·4
Other defects .	32·9	26·7	25·8	31·7	33·6	38·6

NOTE.—This table is adapted from Axel Key's report, translated by Dr. Leo Burgerstein.

England

In many parts of Europe the respective governments followed a natural tendency towards progress. In England, on the contrary, there has been no reasoned plan of development. The new system of medical inspection of State schools, dating from 1908, is the result of special Parliamentary legislation,[1] which inspired sudden action on the part of the Board of Education. In a few scattered localities various steps had previously been taken by the responsible educational authorities to secure some degree of health inspection. But their efforts were all equally devoid of cohesion and comprehensiveness, and extended over a period of nearly twenty years without marked development in any direction.

Scientific investigations on the part of individuals, however, were not without their parallel in England. About 1860 the need for some system of physical training in the public schools and in the army began to attract attention. As a result a gymnasium was established in Oxford, which, under the direction of Mr. Archibald Maclaren, for many years served as a great centre for spreading knowledge as to the impor-

[1] See part (2) of this chapter, p. 33.

tance of physical education. Throughout the middle of the last century Mr. Edwin Chadwick was doing a great work on behalf of national education.[1] With him originated many modern ideas as to the physiology and psychology of school methods. In 1882 he published an essay upon 'The School Children of the Metropolis', in which he gave a brief summary of his observations and research in the schools.

In connexion with the London Health Exhibition of 1884, some interest was displayed in the subject of school hygiene, but no definite advance was made. In 1885 there was considerable agitation about the subject of overpressure in school, which was probably an outcome of the inquiries of the Prussian Commission on the same subject a few years earlier.

About this time, Dr. Francis Warner first directed his attention to the examination of school children, with special reference to their mental status. His pioneer work led to the appointment, in 1888, of a Committee of the British Medical Association for the scientific study of the mental and physical conditions of child life. In 1892 Warner published a full report of the examination of 50,000 school children in 106 schools;[2] and later issued a further report upon another 50,000 children in conjunction with Dr. Shuttleworth

[1] Edwin Chadwick, C.B., was one of the Poor Law Commissioners in 1832–4. He was author of the 'half-time system of education', which in those days marked a tremendous advance towards compulsory education. He was also the promoter of many sanitary reforms.

[2] These investigations were conducted in a variety of schools—Poor Law, industrial, residential and day schools.

and Dr. Fletcher Beach. The result of these investigations was to arouse general interest in the whole subject of educational hygiene. The need for the scientific classification of school children according to their mental and physical capacities was evident and, as a result, mental deficiency was officially recognized, in 1889, by the Royal Commission on the Blind, Dumb, and Feeble-minded. Dr. Warner also drew public attention to many conditions adversely affecting the health of the school child. In fact, he laid the foundation of the science of child study and stimulated the interest of many medical men in the larger field of school hygiene.

In contrast to this enthusiasm on the part of individual workers, official sympathy was but slowly aroused. Few of the Local School Boards concerned with the administration of the Elementary Education Act, 1870, appreciated the importance of Dr. Warner's investigations, though, even at this period, agitation for systematic medical inspection had become universal in Germany. The first official step in England was the appointment of medical officers to act as advisers on general medical matters in connexion with Elementary Education, and especially for the examination of children suffering from gross disease necessitating absence from school. No statutory provision for these appointments or for the conduct of any medical inspection existed ; but progressive School Boards, taking a wide view of their general powers, appointed medical advisers as ' necessary officers ' under the general

powers conferred by Section 35 of the Elementary Education Act, 1870.

Thus, in 1891, a medical officer was appointed by the School Board for London : and two years later Dr. James Kerr was appointed at Bradford, ostensibly for the purpose of examining absentees from school, who were alleged to be suffering from disease, but who did not furnish a doctor's certificate. The appointment of these officers was a matter of expediency for the authorities concerned. It was expedient to hold a medical examination of teachers and other employees, to have expert opinion about outbreaks of epidemic disease and to prevent unnecessary absence on the part of children suffering from slight diseases. But these early steps were taken in the interests neither of education nor of the children. And yet much has grown out of little. Dr. Kerr was the pioneer of all official routine in connexion with medical inspection in the elementary schools of England. He appears to have been the first medical man to enter the schools daily in the rôle of a school doctor, and to study all problems of school hygiene, working in conjunction with the teachers in the interests of the children. In Leipzig, local school doctors had been appointed two years previously, but apparently they acted in the capacity of specialists for the eyes or ears, rather than for general purposes.

The first authoritative advance was made by the statutory provision for the appointment of medical officers for the purposes of the Elementary Education (Blind and Deaf) Act, 1893, and of the Elementary

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Education (Defective and Epileptic Children) Act, 1899. About this time—but more especially since the constitution of the new Education Authorities under the Education Act, 1902—medical officers were appointed in many places, but for various purposes—some to give lectures to the teachers in hygiene, some to examine children with defective vision, others to examine mentally defective children and children alleged to be physically unfit to attend school, and others to report upon the sanitary condition of school premises. But nearly all of these appointments were held in conjunction with other offices, and were insufficiently paid. The effect was, that very little useful or satisfactory work resulted from such spasmodic efforts, and the doctors devoted scant attention to the broader problems of school hygiene. As late as May, 1903, the medical officer to the School Board for London reported that 'the chief matters coming under notice hitherto had been :—

'1. Notification by teachers and control by individual exclusion, class, or school closure in cases of infectious diseases.

'2. Examination of teachers, candidates, or employees in regard to health.

'The examination of defective children was also carried on by the medical officer and his staff, but not under the supervision of the Department. As regards (*a*) school work and methods in their hygienic bearing ; (*b*) physical conditions of children—measurements, nutrition, vision, hearing ; (*c*) condition of schools—

ventilation, heating, lighting, furniture, very little has been attempted.'

The remainder of that report, however, is pregnant with possibilities, and is the earliest literature in English dealing with the practical results of systematic school inspection by medical men.

Dr. Leslie Mackenzie, writing in 1904, says, 'In England the system has so far spread, that already there is a Society of Medical Officers for Schools; the larger School Boards provide for medical attendance on their teachers and pupil-teachers, for the regular visiting of their schools, for the dovetailing of medical school inspections with the regular work of the public health organizations, and, generally, for the discovery of infection among school children and the prevention of infection by detailed periodic examinations of school premises.' The fact that this progress was more apparent than real may be gathered from the attitude of the central authority, which, in 1903, decided to abolish the epidemic grant[1]—a retrograde decision, still unrevoked; as well as from the report of the Inter-departmental Committee on Medical Inspection and Feeding of Children attending Public Elementary Schools, 1905. This report states that, 'in addition

[1] The epidemic grant was the national insurance against the spread of infectious disease in school. Its abolition is prejudicial in two ways. In the first place it has the practical effect of mulcting local authorities who exclude children suffering from epidemic disease. Secondly, the teachers themselves are penalized; for their grading and salary depend on the percentage of attendance. In doubtful cases, therefore, the teacher may be inclined to act contrary to the public interest.

to London, 48 local authorities, comprising 2 counties, 25 county boroughs and 11 urban districts have established a definite system of medical inspection'. But, on further investigation, it appears that not more than 10 of these authorities considered the matter at all seriously in its systematic and educational aspects, while the actual work done was inconsiderable owing to the general lack of system and organization.

The reason for this slow progress is sufficiently obvious. All local efforts were voluntary, and occasionally were marked by misdirected zeal. There was, indeed, no accurate or certain knowledge as to the meaning of school hygiene or as to the requirements of medical inspection. School doctors were educating themselves, and none had made a statement of what was necessary or of what was practicable. No authoritative body or directing head was to be found, and, above all, the Board of Education, to whom the local authorities naturally looked for guidance, was slow to take any action. There was a consequent lack of system, together with confusion of ideas and absence of clear thinking. Practical results were hardly to be expected.

Owing to this imperfect understanding of the subject, the inseparable problems of health inspection and school hygiene became confused in the mind of the medical profession as well as of the public. Health inspection caught the popular fancy; school hygiene was lost to sight.

As a result of the South African war, 1899–1902,

public interest in the problem of the national physique had been aroused. A War Office Memorandum concerning the progressive deterioration of the classes from which recruits for the army were drawn, gave rise to various alarmist rumours. An Interdepartmental Committee was appointed in 1903, and after extensive inquiries recommended, among other measures, the introduction of systematic medical inspection of school children. This recommendation resulted in the appointment of another Interdepartmental Committee in 1905, whose terms of reference required them ' to ascertain and report on what is now being done, and with what result, in respect of medical inspection of children in public elementary schools'. Their report, to which allusion has already been made, showed the nakedness of the land, but the Committee were limited by their reference to the recording of results. They were not required to make any recommendations for improvements.

As an outcome of these official inquiries and investigations, the need for health inspection of the children, for improved sanitation and for the prevention of infectious diseases in the schools was recognized ; but no attention was given to the general requirements of school hygiene. It was in this spirit that legislation was proposed in the Education Bill of 1906, the consideration of which is postponed until the legislative efforts of other countries have been summarized.

(2) Legislation

Meanwhile, great progress was taking place on the Continent of Europe and elsewhere. It is impossible to give more than a brief sketch of the movement; and reference, for the most part, will be confined to legislation and to the general attitude of the various States, rather than to the activities of individual municipalities.[1]

Austria and Hungary

In France special regulations for medical inspection of schools were issued in 1833, but were not enforced.[2] The Swedish Government prescribed duties for school physicians in secondary schools in 1863. But, as far as primary schools are concerned, Austria was the first country to publish effective legislation. A ministerial decree of 1873 ordered the establishment of permanent health committees, with physicians as regular members. Detailed regulations concerning the sanitary arrangements of schools were also issued. A number of State physicians have been appointed to inspect schools, to make suggestions for the amelioration of evil conditions, and to submit annual reports. In addition, certain localities have undertaken to supple-

[1] The following notes have been collected for the most part from Dr. Leo Burgerstein's *Handbuch der Schulhygiene.*

[2] These regulations were probably the outcome of inquiries into the educational needs of feeble-minded children. Dr. Belhomme and Dr. Voisin had already organized special schools for idiots at the Bicêtre and Salpêtrière asylums in Paris, thus anticipating by a few years the work of the more famous Dr. Seguin. Cf. p. 14.

ment this inspectorial system by appointing local physicians for special work. Vienna has a special law dating from 1895.

In Hungary, the office of school physician was created in 1885, and two years later a number of physicians with specified duties were appointed for secondary schools.

France

In France, though regulations date from 1833, few steps were taken until 1884, when health inspectors were appointed in Paris. In 1886, medical inspection of schools was decreed for the departments. With a view to the enforcement of these regulations, the communal physicians of the poor were required by the law of 1892 to inspect all children in the provincial schools. The system of medical inspection was completely reorganized in Paris in 1896. In each district schools are now divided into groups and a local school doctor is appointed to visit each fortnightly, and is expected to make a careful examination of each child once a month. Some of the school doctors undertake special investigations in the problems of school hygiene.

Argentina

In 1888, the Argentine Republic entrusted the medical supervision of primary schools to a School Medical Board, consisting of sixteen members. At a later date the secondary schools were placed under the medical supervision of a special School Section of the National Board of Health. In addition to carrying

out routine health inspection, these specialists undertake the scientific observation and study of school diseases and their prevention.

Norway

The history of medical inspection in Norway presents a model of orderly and progressive legislation. In 1885, some localities had appointed school physicians. In 1889, permissive regulations were passed, empowering local authorities to appoint health inspectors. Two years later these regulations were made obligatory. The duties of medical inspection were entrusted to salaried local physicians, who were required to investigate the health conditions of the children in their schools three times a year. In 1898, a further law was passed, instructing school physicians to attend to the fuller requirements of school hygiene and to furnish an annual report.

Sweden

Sweden, which has already been mentioned as one of the pioneer countries in the matter of physical education, has adopted a similar method of progress for secondary schools. As far back as 1868, a local medical officer was attached to the staff of each school. His duties were gradually increased by statute and his sphere of activity has been slowly extended. At first a school physician was required only to examine children as to exemption from physical exercises. In 1878, an examination as to general health was held

at the beginning of each term and a health committee was appointed to each school. The medical supervision of primary schools was not begun till 1895, and has been left entirely to municipal enterprise. Thus the city of Stockholm, in addition to establishing a system of health inspection in 1899, has devoted itself more especially to the experimental study and investigation of many problems of school hygiene.

Japan

In 1898, in Japan, the Minister of Education ordered the appointment of school doctors at every public school. Only places with less than 5000 inhabitants were exempted. The school doctors are nominated by the local governors, and their duties are defined by law. The schools are visited once a month.

Switzerland

In 1898, the Swiss Federal Government recommended the medical examination of all children upon their first admission to school. Thirteen cantons carry out the recommendation, and many of these had previously made additional provision for systematic health inspection and for general school hygiene. The Education Department of each canton exercises its own judgment, in accordance with local needs. But in almost every case a doctor is to be found as an active member of every local school board (Schülkommission) throughout the country; in this way total neglect of school hygiene is avoided, even in outlying districts where no provision is made for systematic inspection.

Germany

In Germany different regulations have been adopted in the various provinces and towns. In 1891, Leipzig made a beginning, and was soon followed by Wiesbaden, which was the first municipality in the world to establish a model system of medical inspection—a system which took account not only of the health, but also of the educational requirements of the children on admission, and at the same time made provision for the re-examination and supervision of all children. In 1898, the Prussian Ministry urged the adoption of the Wiesbaden plan by all municipalities and towns in the kingdom. In consequence, the movement spread rapidly throughout Germany. One of the aims of German methods of administration is to reduce as far as possible the number of children allotted to each school physician, with the object of securing more personal work.

United States of America

In the United States of America the chief aim of the medical inspection, so far, has been directed towards the prevention of infectious and contagious disease. Much useful work has been done in this direction by various municipalities, but very little has been attempted with regard to the real problems of school hygiene, except in Boston, where a director of school hygiene was appointed as early as 1891. In the following year, medical inspectors were first appointed

for the prevention of contagious disease; next the problem of school sanitation was considered; then came the physical condition of all school children, followed by the scientific study of child life and of problems of school hygiene. This evolution extended over a period of sixteen years, and now a fully staffed special department of school hygiene has been established, with a director, three assistants, special instructors in military drill and in physical training and athletics, playground teachers, nurses, and a medical inspector of special classes. In New York and other cities a great deal of work has been done for the prevention of infectious and contagious diseases. Legislation as to medical inspection exists only in four States. In 1906 a mandatory law was passed in Massachusets which made provision (1) for the detection of contagious disease at school; and (2) for the annual examination of children (*a*) by physicians for non-contagious physical defects, and (*b*) by teachers for defects of eyesight and of hearing.

Russia, Bulgaria, and Roumania

With regard to secondary schools, Russia and Bulgaria, in addition to the countries already indicated, have made special provision for medical inspection—dating from 1871 and 1904 respectively. In Russia, the Minister of Education has a medical department at his service. In 1895 six school physicians were appointed to supervise the seventy-two elementary schools in Moscow. In Roumania adequate legislation

for the main purposes of school hygiene has been in force since 1899.

Apart from State legislation, various municipalities have adopted systems of medical inspection. Two are especially worthy of mention. Brussels is credited with being the first municipality to establish a system of school inspection by medical men. Ever since 1874 physicians have been appointed for the purpose of visiting schools two or three times a month. In 1896 fifty-two school physicians were at work. Oculists and dentists are also employed for special duties. At Cairo, in Egypt, a school physician was first appointed in 1882. He has the services of two assistants, each of whom has charge of 5,000 school children.

This brief outline of legislative tendencies abroad shows that many nations have arrived at nearly the same stage of activity and progress. No State has a completely organized scheme, but there is evidence of a considerable amount of dissatisfaction and agitation amongst educationalists in several countries. Some Governments have favoured progressive methods of educational advance combined with sympathetic interest in school hygiene. Others for many years past have been content to impose or to recommend some system of health inspection. But, for the most part, activity in both these directions has been the result of municipal enterprise.

At the beginning of the present century the agitation as to the far reaching importance of school hygiene,

quite apart from systematic health inspection, had become so universal that an International Congress was inaugurated at Nuremburg in 1904. The second meeting, which was held in London in 1907, served to arouse public interest in this country. The effect of these Congresses has been to focus attention upon what is being done in all parts of the world.

England

Though the Congress of School Hygiene in 1907 showed that England was still far behind many nations as regards public interest in school hygiene, yet it was evident that the compulsory measure—at that time under the consideration of Parliament—could be utilized for the introduction of a scheme far ahead of any that obtained in other countries. For already London had prepared the way, and had made the first real advance in England towards a definite system of inspection as a factor in the larger problem of school hygiene.

In 1904 the Education Committee of the London County Council first increased the permanent staff of its medical officers' department with a view to the more careful supervision and control of special branches of the work. In 1905 twenty ' part-time ' medical inspectors were appointed, and to each was assigned one of the metropolitan school areas. The greater portion of their time was occupied in routine work, such as the inspection of physically and mentally defective children in the schools and the examination

of children with defective vision ; and at the same time advice was given to the teachers concerning the general hygiene of the schools and of the children. In addition, a staff of thirty-two nurses, under a lady superintendent, was employed for the routine examination of all children as to verminous and parasitic conditions and as to contagious skin disease. This scheme only purported to be an outline of better things. But each medical inspector was encouraged to make original investigation under the guidance and supervision of the medical officer ; and in this way a clear insight into the work and its possible developments was obtained. Each inspector, following his own individual line of thought, has, so to speak, educated himself in school hygiene and added something to the store of knowledge on the subject.

Though the scheme was only tentative, and though no absolute and definite status was given to the medical inspectors, yet the results clearly justified the experiment ; and the reports of the medical officer were the basis on which the details of the first official memorandum issued by the Board of Education to local authorities were prepared.

In 1906 legislation was first introduced into Parliament, and a permissive clause, empowering local authorities to make provision for health inspection, was included in the Education Bill of that year. All parties, however, were unanimous in their desire to make the provision obligatory. The clause was accordingly amended, but, during the ensuing twelve months,

it went through many vicissitudes in Parliament until it was finally embodied in the Education (Administrative Provisions) Act of 1907 in the following terms :—

'The powers and duties of a local education authority under Part III of the Education Act, 1902, shall include :—

The duty to provide for the medical inspection of children immediately before or at the time of, or as soon as possible after, their admission to a public elementary school, and on such other occasions as the Board of Education direct, and the power to make arrangements as may be sanctioned by the Board of Education for attending to the health and physical condition of the children educated in public elementary schools.'

In the meantime, no preparations were made by the central authority in view of these impending obligations. It was not until the Act was actually placed on the statute book that a medical officer was appointed to advise the Board of Education, and the first official memorandum was issued only five weeks before local authorities were required to institute a system of medical inspection.

Hence it is that the present organization throughout the greater part of England is rather the outcome of sporadic impulse than of any orderly process of reasoned development. Moreover, it is only now, in the twentieth century, that modern civilization is again beginning to approximate to the system which obtained in ancient Greece, when a national school which trained the mind only and neglected the body of the pupil was an inconceivable institution.

CHAPTER III

THE CASE FOR MEDICAL INSPECTION

State Control of Health Inspection.—Irrelevant Arguments: (*a*) Anthropometry; (*b*) Underfeeding; (*c*) Overpressure; (*d*) Infectious Disease.—Medical Inspection not necessarily the Corollary of Compulsory Education.—Essential Argument for Medical Inspection.—Large Amount of Unrecognized Defects among School Children.—Medical Inspection a Means to an End.—Education of Parents and Children.

Medical inspection of schools forms an integral factor in every modern system of education, and its expediency may be assumed from its successful administration in other countries. But hitherto, despite their essential claim to universal consideration, the general principles have never been clearly defined. Fundamentally, the State control of health inspection depends upon the fact that a large proportion of children attending State schools are suffering from preventible and remediable diseases. It matters not for the moment to what extent the home is responsible, nor how far the diseases are aggravated by school life. It is sufficient that the defects are unrecognized either by teachers or parents, who alone are in contact with the children.

Hence it is clearly a national duty to discover a system by which these preventible and remediable defects may be brought to light. It is unessential to

the State whether the health inspection of its children take place in the school, at the home, or elsewhere, so long as a physical census is taken and all defects are investigated. But, seeing that the children are collected together during nine or ten years of their life in State schools for the purpose of education, it becomes a matter of convenience to delegate the nation's responsibility to the Education Department.

This appears to be a simple and a logical standpoint which scarcely requires further justification: but on all sides arguments, in many respects irrelevant or non-essential, have been brought forward to justify the interference of the State. Thus, those who believe in the general progressive physical deterioration of the race have escaped the trouble of further thought by arguing that the very existence of this physical deterioration shows the necessity for systematic medical inspection of school children. It is, however, more than probable that no such general deterioration is to be found—and this probability accords with the conclusions of the Interdepartmental Committee on Physical Deterioration, 1904.[1] Some also—perhaps as

[1] 'It has now been seen that there are no sufficient data at present obtainable for a comparative estimate of the health and physique of the people, and the Committee have indicated the measures that, in their opinion, should be adopted in order to supply the want, but, before concluding their task, they deemed it their duty to consider the causes and conditions of such physical degeneration as is no doubt present in considerable classes of the community, and to point out the means by which, in their opinion, it can be most effectually diminished, and more especially to discuss this aspect of the question as it affects the young during the three periods of infancy, school age, and adolescence.

It may be well to state, at once, that the impressions gathered from

a result of the Committee's recommendations—have inclined to an enticing scheme for an anthropometric survey of the children as a sound basis for the introduction of routine medical inspection. But the proposal, though of a certain scientific value, will not bear too close an investigation at present, and may even be less valuable than appears at first sight.

Many others, in seeking to establish a superficial case for health inspection, have been led to emphasize certain points which are beside the main issue. This attempt to enlist popular sympathy takes many forms. Alarmist press articles headed: 'Under-feeding,' 'Brain-fag at School,' 'Defective Vision,' 'Infectious Disease at School,' meet us on all sides. Many a champion of the cause bases his position upon some such appeal to sensationalism. Yet not one of these reasons alone, not even the sum total, could justify routine medical inspection of schools by the State, or by the local education authorities. Such superficial statements must be thoroughly sifted and analysed before they can be reasonably claimed as logical arguments in favour of the scheme. And while it cannot be denied that on all these points there is need for progress or amelioration, as also in the planning, building, and sanitation of the schools, it is clear that particular remedies can be discovered for one and all without having recourse to wholesale medical inspection.

the great majority of the witnesses examined do not support the belief that there is any general progressive physical deterioration.'

For instance, the want of harmony and co-operation between architect, doctor, educational expert, and sanitary engineer, cannot be satisfactorily amended by the periodical inspection of school premises—a duty often given as the *raison d'être* for medical inspection, and often in the past one of the chief functions assigned to the educational medical officer. This lack of co-operation is due to a fundamental error of administration, which will gradually disappear with growth of insight into the requirements of schools and scholars. Moreover, too little at present is known on the vexed question of ventilation for any one, except an expert, to dogmatize, and only the medical inspector who has time for research will help to solve this ' most pressing question of school hygiene.

Routine medical inspection of the children will neither prevent nor materially alter the course of outbreaks of epidemic disease. The theory that infectious diseases may be prevented by a system of routine inspection has been urged in America, and was at one time recommended in the medical press, one leading authority asserting : ' I regard prevention of infection as the prime, if not the main, function of physical inspection '. These outbreaks must still be dealt with, as they occur, by the co-operation of the sanitary authority with the school doctor. Their prevention can only result from careful research and observation—quite apart from routine inspection—towards which many school doctors will contribute their share of work. Further, it must be remembered

that the school may not be so important a factor in the spread of epidemic disease as is commonly supposed.[1]

Similarly, the existence of under-feeding has been thought a sufficient reason for the institution of systematic medical inspection; but this matter is rather a problem for social than for medical investigation. At the same time those school doctors who have time for research will be in a position to give invaluable assistance in solving the problem.

Finally, it is a plausible but scarcely a convincing argument to assert that medical inspection of school children by the State is the natural corollary of compulsory attendance at school. Such an argument presupposes that a number of healthy children are injured in health by bad buildings, by unsatisfactory discipline and faulty curricula, or by exposure to infection. But, even if the assumption were well founded, the remedy for such injury would consist rather in improving the schools and the routine—an improvement at once secured by the merest stroke of the pen—a memorandum issued from head quarters. In other words, the State can discharge its responsibility for safeguarding the child's health at school without instituting systematic inspection of the children.

All these arguments, which are commonly advanced, fail to touch the root of the matter. The majority of schools are not hotbeds of infection, nor do the majority of schools show a proportion of degenerates or under-

[1] Cf. chap. v, p. 60.

fed children, or of children suffering from infectious disease. But every school does contain a percentage of children suffering from unrecognized defects.

Here, in a word, is the essential point for the introduction of systematic inspection of all children at some time or other during their school career.

In fact, as was indicated at the beginning of the chapter, the only justifiable *a priori* argument for the State control of a system of health inspection rests upon the fact—which cannot be denied—that there are present in the schools (town and country alike) children suffering from preventible and remediable diseases, of which both the teachers and the parents are ignorant; besides others suffering from diseases the serious nature and consequences of which no one but a medical man can recognize. This assertion scarcely needs the support of figures and statistics, but in passing let us recall the fact that more than 80 per cent. of the children are suffering from defective teeth, that 50 per cent. are affected with vermin or other parasitic conditions, 20 per cent. with defective vision, and that 10 per cent. are retarded in their educational progress by physical defects such as anæmia, general debility, and deafness resulting from adenoid growths, or discharging ears. These figures may not be exact. Some are probably underestimated, and some are probably exaggerated, according to the inspector's opinion of what constitutes a defect. But the general inference is sufficiently sound.

All other *a priori* arguments for systematic inspection can be modified upon further inquiry into the subject. But as long as there are in the schools such children as those which have been described, so long the necessity for systematic health inspection is obvious from all points of view. In other words, medical inspection in the elementary schools is necessary because the parents are ignorant. It is only a means to an end, and at present the end is the education of the people. Indeed it has been argued that it devolves upon the State at the present day to make good its defective training and education of the parents during the last twenty or thirty years, by directing a system of health inspection towards the education of parents and children alike. For, if all parents had been taught the elements of healthy living, and were able to recognize the presence and to realize the importance of physical disabilities and defects in their children, systematic health inspection would, theoretically, be out of the question. Medical advisers to local education authorities would still be necessary, and little more.

But, as matters stand to-day, the interference of the State is essentially justified by the large amount of preventible and remediable defects among school children. These defects are unrecognized either by teachers or parents, and can only be discovered by systematic medical inspection.

CHAPTER IV

THE STATE'S RESPONSIBILITY

Children the Nation s best Asset.—Development of this Asset.—Preventing a Bad Debt.—Physical Census of Children.—State requires exact Knowledge of Health Conditions.—Eutrophics.—Digestion and Utilization of Facts and Statistics by the State.—Increased Attendance at School.—A Lesson from New York.—Educational Wastage Prevented.—Preparation of Children for Education.—Physical Defects and Backwardness.—Adaptation of Educational System to Needs of Children.—The Dull and Backward.—Lower Grade Schools.—Summary.

In the last chapter an *a priori* case for the health inspection of school children was established—namely, that medical inspection is necessary because a large percentage of children are suffering from unrecognized defects. But the subject must be analysed still further and considered from three different points of view :—

(i) of the State,

(ii) of the public health,

(iii) of the individual ;

each of which will be treated in a separate chapter.

First of all, in what way and to what extent does medical inspection of schools concern the State ? If, as it is constantly asserted, ' the children are the State's best asset ', and the education of children is ' grand Imperial work ', ought not the State to develop its asset to the fullest possible advantage, always preventing waste and unnecessary expenditure, without

at the same time turning a deaf ear to what is obviously necessary ? Such truisms necessarily imply that it is desirable in the national interest, if not to protect and nourish the children with care and attention, at least to keep the balance on the right side, to prevent the asset from becoming a debt. Although it may not be to the advantage of the State to educate the feeble-minded, or to maintain the life of a consumptive child, it is a matter of expediency to educate the educable and to keep the healthy in good health ; and in both cases expert medical advice is essential, unless the efforts of the State are to be misdirected.

Thus both from the physical and the educational standpoint medical inspection becomes a national duty.

Owing to the prevailing ignorance of health conditions, a physical census of the children—not necessarily an anthropometric survey—is periodically required. Ever since the beginning of the South African war in 1899, the standard of our national physique has claimed public attention. In 1903, on the responsibility of the Director-General of the Army Medical Service and the Inspector-General of Recruiting, the War Office issued a memorandum, in which attention was drawn to the increasing number of recruits who were rejected as useless for military service through want of physical development, defective vision, disease of the heart, and through bad dentition. As a result an Interdepartmental Committee was appointed, and, though they were of opinion that no general progressive physical degeneration was to be feared, yet they observed many

serious factors affecting the health of the nation. Incidentally, the Committee indicated particular remedies and emphasized the importance of collecting definite *data* bearing upon the physical condition of the people; and with this object in view they recommended that 'a systematized medical inspection of children at school should be imposed as a public duty on every school authority,[1] and that a contribution towards the cost should be made out of the Parliamentary Vote'.

What practical purpose will a physical census serve? The annual wastage of life from epidemic disease, from infantile mortality, or from any particular condition, is known; but, except in very general terms, the factors which are the cause of this wastage are not known.

Thus we know that, according to official returns, out of every five applicants who present themselves for military service, only two remain in the army as effective soldiers at the end of two years' service. The remainder are either rejected because they do not attain the low standard of health required, or they are subsequently invalided as unfit for military service. But the State has taken no cognizance of the life history of these degenerates; few of us know how they have survived the perils of infancy

[1] This duty does not necessarily fall to the school authority. It merely devolves upon the State to devise some scheme for taking a physical census of its people. This might be undertaken at any time or place. But, because all children are collected together at school during a period of life when most advantage can be derived from health inspection, it seems natural to impose the task upon the education authority, rather than upon any other body.

and of school days; how they have been neglected and abused; how they have been deprived of air-space and sunshine. Yet the very factors which prevent would-be army recruits from attaining a low standard of physique are at the same time undermining the health of the numberless children, whose records are not to be found in life-tables, in army recruiting lists, or in the annals of the criminal court, of the lunatic asylum, or of the Poor Law infirmary.

The State requires absolute and definite knowledge concerning the health of its children, together with an analysis of the health conditions of town schools as compared with the health conditions of country schools.

The first step towards this knowledge is investigation, and by investigation is meant a physical census of the children. What is needed is not so much statistics of height, weight, and chest measurements—desirable as these are from the scientific point of view,—but exact knowledge of the conditions which lead to general physical degeneration, defective teeth and eyesight, epidemic disease and consumption. This knowledge is to be obtained from the general impressions of competent observers embodied in accurate reports upon special subjects, rather than from the accumulation of unwieldy statistics and ill-digested information.

Once in possession of this knowledge, the State will be in a better position to understand the problem of the national health; and will be able to recommend and to enforce reasonable measures for the prevention of the tendency to physical degeneration which exists

in certain classes of the community as well as for the amelioration of evil conditions revealed by medical inspection. Then also it will be possible to decide upon the desirability of instituting a permanent anthropometric survey for practical purposes.

In the meantime, a general improvement in the health and physique of the nation should be the result. It is obviously a national duty to spare no effort to improve the general standard of health and physique of the children now at school, and so, as a result, of the next generation. This is one of the first principles of the science of Eutrophics which, for the moment, wins more general approval than the more drastic methods of Eugenics.

The State may safely delegate the burden of collecting information and of carrying out ordinary routine work to the local authority. But far more remains to be done. Facts and statistics, which, if left to accumulate in pigeon-holes, become valueless, must be digested, assimilated, and utilized as material for inference and research work. It is with this task that any central authority should be primarily concerned. Instead of complacent acquiescence in convention, instead of wilful blindness, obstinate deafness to the teaching of experience, there should at least be some attempt at head quarters to keep abreast of the advancing tide of increasing knowledge, to welcome obvious reforms, to abandon the traditional attitude of indifferent hostility towards any and every innovation. Where else can the inquirer look for guidance?

Valuable work has been done on all sides: the conclusions arrived at are not too readily accessible, and can only be extracted with difficulty from the unwieldy mass of information to be found in the reports of school medical officers. Hence it would seem advisable, under the new *régime*, for the Board of Education itself to institute special medical investigations in conjunction with the local school doctors. For instance, statistics as to eyesight in various districts of England were collected ten years ago and duly placed on record. A report was published, but no practical steps were taken either to digest the facts, or to ameliorate the conditions. But unless such statistics are employed as a basis for inquiry into the exact conditions which make for defective eyesight in towns and populous centres, their precise value is to seek. What is essential is to arrive at and follow up conclusions such as those actually obtained by many observers, and more recently by Mr. Wright Thompson [1] in Glasgow, viz. :—

1. That defective eyesight is largely preventible.

2. That town children (over and above those actually suffering from optical defects) have less acute vision than country children.

3. That children from the poorest quarters of populous centres are more seriously affected than other town children.

4. That visual exercises may be undertaken at school

[1] Second International Congress on School Hygiene: *Transactions*, vol. ii, p. 530.

with the object of increasing the sharpness of distant vision.

Similarly with regard to adenoid growths, defective teeth, the spread of tuberculosis, and other problems, the bare facts have been before us for years past. But they are still waiting for official cognizance and further scientific investigation.

From the educational standpoint, how is the State to be benefited ? Systematic medical inspection will eventually lead to an increased attendance of children at school. The report of the Interdepartmental Committee on Medical Inspection shows that the various medical officers, who have already acted on behalf of the local education authorities, have done much towards improving the attendance of the children at school, and have frequently prevented unnecessary school closure, in cases of outbreaks of epidemic disease.

The State has imposed compulsory education on all children, and to a certain extent estimates efficiency by the school attendance figures. The system is not altogether satisfactory ; but obviously, the higher the percentage of attendance, the more chance there is that the education given will prove beneficial to a greater number of children. So that efficiency indirectly depends upon attendance, and most measures that increase attendance make for increased efficiency in education. We say ' most measures ', advisedly ; for it is common knowledge that the present system of prize and medal distribution, depending as it does on attendance, is pernicious ; for the reason that it induces

parents to send children to school when they ought, for health's sake, to be at home. But any system which increases the attendance of healthy children, or which justifies the presence of less healthy children in school under observation, should certainly be encouraged.

For instance, the transference of physically defective and crippled children to the special schools, which have come into being mainly as the result of the suggestions and advice of medical officers, must necessarily add to the efficiency of any system of education, by increasing the attendance of the children and by bringing education within the reach of those who would not otherwise attend. Accordingly, if systematic medical inspection is conducted on right lines, there is every prospect that it will lead to improved attendance at school. New York offers one necessary word of warning. As a result of imperfect organization and the lack of appreciation of the principles of medical inspection during its initial stages of evolution, the local medical inspectors, acting ostensibly in the interests of the public health, were responsible for the wholesale exclusion of children from school. Thus Dr. J. J. Cronin has said [1]—

'Under the old system of inspection, which was organized by the Department of Health, and which obtained from March, 1897, to September, 1901, all contagious conditions were recorded on a class index-card, and on subsequent inspection were allowed forty-

[1] Second International Congress on School Hygiene: *Transactions*, vol. ii, p. 551.

eight hours' grace, and, if not within that time under treatment, were at once excluded. The number of exclusions were enormous ; some of the schools were depopulated by half. This created the most bitter and strenuous opposition from the Board of Education. The Department of Health was accused of interfering with the compulsory educational law, and was indeed responsible for much truancy, with its consequent illiteracy. Many of the conditions thus excluded by the Department of Health could safely be allowed to attend school, provided that proper and regular treatment was obtained.'

Wholesale exclusion from school for slightly contagious diseases is clearly wrong, because, unless there is some means of enforcing treatment, the excluded children are equally contagious out of school, and are likely to infect other children both at home and in the street. Consequently with regard to verminous children and those suffering from other slightly contagious diseases, compromise between the local sanitary authority and the local education committee is essential. The children may be separated into special classes pending treatment, and kept under observation. But to avoid any possible repetition of the situation created at New York, the central education authority should exercise some control, and should direct the methods and practice of medical inspectors, who, in their turn, should exhibit due appreciation of the educational as well as of the sanitary aspect of the problem.

It is evident enough that the State will benefit by an increased attendance of children at school. But the cause of education can be further advanced by the

systematic medical inspection of the individual children, and that in two ways. Educational wastage can be prevented, first, by preparing the children for their education; and secondly, by adapting the educational system to the physiological requirements of certain groups of children.

With regard to the first, he who would both sow and reap does not begin by scattering his seed. He first prepares the soil. Similarly, if the State is to reap a full harvest, the children must be prepared for their education by the school doctor. Normal children need no special consideration at his hands; but a large number of children, owing to their physical defects, are retarded in school work and require special medical treatment. Such conditions include defective vision, deafness, and general ill-health. On the other hand, these defects, varying as they do in degree and kind, do not necessarily retard progress in school.

Hence, if the argument is to be logical, there is need to differentiate between those children who, owing to physical defects, are actually retarded, and those who, though suffering from slight defects, are not so retarded.

An inquiry of this nature was undertaken in a poor district of London, with a school population of 10,000. Approximately one third of the children were backward: but, out of 600 cases of backwardness systematically investigated, only 16 per cent. were solely due to physical defects or ill health. Of these, nearly one half were the result of prolonged absence from

school, or of irregular attendance, rather than of the actual defects. In a few more cases, physical defect was regarded as a contributory cause of backwardness.

The same investigation showed that out of 1,360 children — normal and backward — attending two schools, defective vision only directly accounted for backwardness in 2·1 per cent. of cases, whilst 3·3 per cent. were backward as a result of defective hearing or of adenoid growths causing deafness. Slight defects of vision or of hearing may to some extent impair a child's mental alertness, but they are not sufficient to retard educational progress. Such minor defects do not make a case for State interference, but the value of their inclusion in the general scheme of medical inspection will, of course, be recognized. Then again, with regard to infectious diseases, so many of the children in crowded districts are attacked either before school life, or while still in the infant department, that any time lost can easily be made up later. Even two or three months' absence does not necessarily delay a child's progress from one standard to another, unless it happens to come just before the time for promotion. Sometimes, however, the effects of infectious disease may appear secondarily as backwardness due to anæmia, deafness, and so on. A considerable number of anæmic and delicate children—especially girls—are kept away from school, and, even when in school, they are not considered fit to be 'pushed on' with the others. These are generally nervous children in a condition of irritable excitability.

Briefly, then, about 10 per cent. of the school children in crowded districts are suffering from remediable diseases and ailments of such a kind as to hinder their educational progress to a serious extent. These children cannot be dealt with by the teachers, nor do they receive attention from their parents. The advantage to the State of securing systematic medical inspection of such children, with a view to the remedy of their defects and to the abolition of the present waste of educational effort, is obvious. If it is worth while to make every effort to increase the average daily attendance of a school by 1 per cent.—and this irrespective of whether the children are capable of benefiting from their education or not—can there be any doubt of the substantial advantages ensured by transforming 10 per cent. ailing and backward children into receptive children of ordinary intelligence, worthy of the time and trouble which the teachers spend upon them ? Yet this end can be attained by means of a little common sense and medical advice. So that the State, adopting, as it were, the methods of agriculture, will prepare the children for their education by systematic medical inspection.

Educational wastage can be prevented in another way. Quite apart from definite physical defects, there are other causes of backwardness which are only discovered by the school doctor. There is a large group of children, who, by reason of natural dullness and backwardness or mental defect, are scarcely capable of benefiting from the present system of education in

the elementary schools. Various estimates of their number have been made. In London, probably not less than 10 per cent. belong to this group, whilst another 10 or 15 per cent., in addition to those suffering from physical defects, being backward, but not dull, fail to derive much benefit from their education, chiefly because they leave school at 14 years of age without having reached the higher standards.

There is evident necessity for some scientific grouping of school children, with the object of instituting special educational routine for the various classes of children in accordance with their physiological requirements. And since the State has undertaken to provide education for the children, it becomes a public duty to examine into the fitness of the educational code for the child, and to adapt it, where necessary, to the child's requirements. To extend a previous metaphor, it is just as important in agriculture to choose the seed with care to suit special soil, as it is to prepare the soil for the seed. Similarly, the system of education must be deliberately chosen and adapted to the requirements of special groups of children. This principle has already been recognized in the Elementary Education (Defective and Epileptic) Act, 1899, which allows provision to be made for the education of mentally defective children in special schools.

No provision, however, has been made for the dull and backward. To remedy this omission, the Act of 1899 should now be made compulsory, and permissive legislation introduced, empowering local

authorities to establish special intermediate or lower grade schools.

In these schools the aim, so far as reading, writing, and arithmetic are concerned, should be to attain the level of Standard IV. 'Education in these schools should be in small classes, thirty pupils being a maximum. Formal class-teaching should be abandoned as much as possible, and each child encouraged to independent action. Handwork should be used extensively and concrete things talked about, drawn, and described. No books should be used, writing and printing being entirely confined to blackboards and chalk. Arithmetic and numbers should be dealt with as an oral subject, and exercise, handwork, and drill should form a considerable proportion of the school time-table '.[1]

The facts and arguments adduced in this chapter involve the inevitable conclusion that it is to the advantage of the State to institute systematic inspection of school children: First, with a view to their examination upon admission to school—and subsequently at intervals during school life—to discover if any can be benefited by medical advice, and to obtain the co-operation of the parents in the hygiene of the home and of child life. The aim of such examination is partly to anticipate any tendency to physical deterioration, and partly to secure the full benefits of education for the children. Secondly, with a view to exclu-

[1] Dr. James Kerr: *Annual Report of Education Committee.* London County Council, 1906.

sion from the ordinary schools of all mentally and physically defective children, of all cripples, blind and deaf children, and of those who are so dull or backward that they cannot hope to benefit by their instruction, and who are moreover a hindrance to the others.

In brief the advantage to the State is twofold :

(1) The results of educational efforts will be enhanced not only by increased attendance and educational efficiency, but also by a more systematic and scientific grouping of the children, and by adapting school methods to the needs of the children.

(2) The physical condition of the children and of the nation generally will be improved.

CHAPTER V

SCHOOLS AND THE PUBLIC HEALTH

Definition of the Public Health: its Growth and Development.—Sanitation of Schools.—Prevention of Infectious Disease in School.—Daily Inspection Impracticable.—Dissemination in School.—Two Doubtful Assumptions.—School a Place for Control rather than for Dissemination of Disease.—Other Communicable and Preventable Diseases.—Chronic Affections.—Present Organization Inadequate.—Medical Practitioners to prevent rather than to Cure.—School Doctor in New Rôle.—School the Nursery of the Nation.—Co-operation of Teacher, Parent, and Doctor.—Physical Deterioration an Educational Problem.—Summary.

THE science of public health includes the prevention and extinction of all manner of preventable disease, its distant goal being the rearing of a healthy race and the attainment of a high standard of national physique. For the achievement of these ideals, there is need of an extensive re-organization of the public health service, and, as a first step, systematic medical inspection of schools is necessary, in order to supplement the present endeavours of public health authorities in other directions. For instance, the national duty of taking a physical census of the children is one of the latest requirements of the public health. This development indicates a marked contrast to the significance of the term in the past, commonly restricted as it has been to sanitation and the prevention of the so-called dangerous infectious diseases.

To begin with this limited aspect of the problem, and first of all with regard to sanitation. There are thousands of school-houses throughout England which are totally unfit for their purpose. Unsuitable buildings, overcrowded class-rooms without proper means of ventilation, heating or lighting, unsatisfactory cloak-rooms and water-closets,—these are their characteristics: and in spite of all there is often little enough attempt to carry out any approved system of cleansing.

These deplorable facts are already well known to educationalists, and there is not so much need for systematic inspection and reports as for some well-considered comprehensive scheme of amelioration under each authority. It is easy enough to criticize and to condemn, but it is often difficult to suggest reasonable and satisfactory remedies. For instance, one Education Committee proposed that their school doctor should begin his duties by reporting upon the sanitary conditions of the schools. But the County Council threw out the recommendation on the ground that the doctor would find something insanitary in every school in the county, and that they were not prepared to meet the expense of reconstruction. Moreover, such a survey occupies a considerable amount of time[1] and requires expert knowledge with regard to school construction and methods of ventilation, heating and lighting.

[1] In Blackburn, Dr. Greenwood devoted almost a year to the preparation of a detailed report upon the structure and sanitary conditions of fifty elementary schools.

Consequently from the sanitary point of view systematic medical inspection, while bringing to light obvious and gross defects not necessitating extensive structural alterations, should from the first be more especially directed to the instruction of teachers and schoolkeepers as to how they can make the best of their present unsatisfactory surroundings. In this way good results may be expected, whereas detailed reports as to the academic requirements of modern hygiene and sanitation are likely to be shelved by sceptical committees. The school doctor's services, at first, will be better employed in other directions, and in these matters his constant aim should be to co-operate with the architect and sanitary engineer with a view to preventing the recurrence of insanitary conditions in the future. With regard to the improvement of old buildings, the principle should be invariably enforced, that a consultation in which the teacher, architect and doctor all take part, should be held on the spot.

The prevention of infectious disease has figured so largely as the main function of public health work, that at one time a serious suggestion was made—and was actually carried into practice in the United States of America—that a medical inspector should visit every school every morning, for the purpose of excluding any children suffering from infectious or contagious diseases. But such a scheme, though undoubtedly relieving the teachers of undue responsibility, savours of gross extravagance. Daily health inspection at school, to be of any real value, involves a medical

examination of all children in the school and the exclusion of those who are not in perfect health. It is not enough for a medical officer to inspect such children as are selected by the head teacher, or to walk hurriedly through the class-rooms. For, in either case, children in the early stages of measles or scarlet fever may be passed over, while the wholesale exclusion of children suffering from headaches and slight colds—although these are often the first symptoms of an infectious disease—is scarcely justifiable.

The impracticability of any satisfactory scheme of daily health inspection is evident, partly on the score of expense, and partly from the interference with school routine. So that, as regards the prevention of the acute infectious diseases, little advantage is to be expected from any system of routine health inspection. But, even in this restricted sense of public health work, there is great need for medical supervision and for careful investigation conducted on special lines, which may eventually lead to the complete control of school outbreaks of epidemic disease.

The school is by no means such an exclusive centre for the dissemination of acute infectious diseases as is generally assumed. It should rather be regarded as a convenient place for controlling their spread. In the past, infectious diseases have been considered mainly in their statistical aspect without exact analysis as to the methods of transmission of disease. Medical officers of health have been denied

the opportunity of studying the actual conditions and routine of school life. As a result two doubtful assumptions have been accepted as maxims.

In consequence of the notable decrease of cases of infectious disease during the school holidays—to which Sir Shirley Murphy first drew attention in 1896—it has been generally assumed that the majority of cases are spread by means of contact in school. It has also been assumed that children between the age of 3 and 5 are more exposed to the infection of measles and whooping-cough at school than at home or in the street. As a matter of fact, more than one third of town children entering school have already had measles and whooping-cough ; and in Scotland, where children are not admitted to school till 6 years old, the early incidence of measles is no less marked than it is in England, where a large number of children attend school from the age of 3. The truth is that, at the present time and under existing conditions, measles is almost uncontrollable, whether in or out of school.

But with improved methods of investigation, and with closer medical supervision in the schools, it will be possible, as Dr. C. J. Thomas has proved by practical experience in Woolwich, to diminish the mortality rate of measles.

The first assumption is equally open to doubt. Dr. Kerr has shown that, owing to the exodus of children from the towns during the holidays, an alteration in the distribution of population takes place which to some extent may account for the decrease in the

number of scarlet fever cases. Dr. Kerr has also indicated from a consideration of the Registrar-General's statistics, that before 1870 the incidence of scarlet fever was greater among girls, who for the most part remained at home and did not attend school ; but that since 1870, the incidence upon girls was progressively diminished for several years concurrently with the enforcement of school attendance, which, as a matter of fact, was directed more especially to the attendance of girls than of boys.

The means of contact infection are distinctly limited in school ; and even these sources of infection can be definitely controlled, if hygienic precautions are introduced into the schools. But there is no means of controlling the scramble of play in the street, or the intimate contact of small children in the homes. Up to the present time, too large a proportion of cases has been ascribed to school infection ; whereas the fact that, if there were no schools, there would be a still greater opportunity for the spread of infectious diseases, has been ignored. So that judgment on this point must be withheld until more is known about the exact methods of transmission. It is certain that infectious diseases are spread by contact in school, but probably not to the extent which has been too hastily assumed.

But so far as systematic medical inspection is concerned, sanitation and the prevention of acute infectious disease are merely secondary considerations, and in no sense its main function.

The significance of the term public health has naturally been extended to include investigation of other communicable and preventable affections quite apart from epidemic disease. Of these tuberculosis was the first to attract attention, and its prevention now occupies a prominent place in public health administration. The study of epidemic diarrhœa in relation to infantile mortality soon followed, and now influenza and pneumonia—to say nothing of cancer and alcoholism—have found their way into the reports of medical officers of health.

But in spite of these rapid developments, there is a large group of communicable diseases, affecting not only the individual but also the public at large, which have so far been almost entirely neglected by public health authorities. Such affections are ringworm, verminous and parasitic conditions, skin diseases, ophthalmia, and other eye diseases. These have one characteristic in common, namely, that they are chronic : and being chronic, and being for the most part diseases of childhood, they are chiefly concerned with the schools. It is due to the work of school doctors, and of medical officers of health, who have placed a wide interpretation upon the scope of their duties, that such diseases in their relation to the school have been brought to light. For years these conditions passed unheeded. Inspectors of schools, sanitary committees and medical officers of health took little enough notice of them. However, now that they are recognized, their spread can be completely con-

trolled, if a thorough system of health inspection is adopted.

Parents whose children attend public elementary schools have the right to expect that their children should not be exposed to the danger of contracting those diseases. Consequently every effort must be made to prevent them. Weekly routine examination by medical men, or by nurses acting under the supervision and direction of medical men, will be necessary at first, and it becomes the duty of the local education authorities to direct their system of medical inspection towards this object. It is manifestly unfair to leave the responsibility for admission or for exclusion to the head teachers, which has been the practice in the past; and it is notorious that many members of the medical profession certify children suffering from these diseases (*e. g.* ringworm or ophthalmia) as fit or unfit to attend schools according to the wishes of the parents.[1]

One of the first functions of any system of health inspection must be to get the children clean and free from parasitic and contagious diseases. It is of more immediate importance than a physical census of the children or an examination for defective vision. Hence it is necessary to assign a local school doctor and a nurse to each small group of schools, in order to keep the children under frequent observation and to ensure the close co-operation of teacher, nurse, and doctor. In this way, these direct efforts to limit the spread and to promote the extinction of the minor contagious

[1] Cf. chap. xiv, p. 231.

diseases constitute an important extension of public health administration.

A momentary digression from the main issue is necessary. For the science of public health has continued to develop itself on far broader lines, and now in addition to problems of sanitation and communicable disease, it includes the consideration of: (1) Factory legislation and occupational disease. (2) Control of milk and food supplies. (3) Housing reform. (4) Alien immigration. Thus we read as one of the duties of a local medical officer of health, 'that he shall inquire into all causes affecting the health of the people in his district'. But the means of carrying out this counsel of perfection are distinctly limited. The administration of the laws relating to public health has become somewhat confused. The developments have been so great and so widely different in character that new duties have been assigned to what is apparently the most appropriate body, with little attempt to prevent overlapping and conflict of function. Hence the supervision and responsibility of public health administration is divided among the Local Government Board, the Home Office, the Board of Customs, the Board of Agriculture, and other offices.[1]

The State has accepted many responsibilities, but has provided no satisfactory central machinery for supervision and control. The code of public health, though adequate in substance and capable of broad interpretation, is through negligent administration

[1] See chap. viii, p. 97.

actually in a chaotic state; and responsibility is for the most part left to local authorities. In fact, the State regards public health chiefly as a matter for local administration, and not as requiring any uthoritative central machinery. So that the Local Government Board, with its inadequate medical sub-department, is often regarded as the State department responsible for the health of the nation.

What is the remedy? Many points of re-organization suggest themselves. Owing to the vast development of the science of public health during the last twenty years, the time has undoubtedly come for the creation of a special Government Department, or Board of Health,[1] on the lines of similar institutions in those countries where civilization is of more recent growth.

Co-ordination will then, and only then, become possible; and all branches of public health can be arranged in their proper perspective with a view to simplifying and improving the present chaotic system of administration. Then it will, perhaps, be practicable for the medical officer of health to inquire into all causes affecting the health of the people of his district; and the significance of the term public health may perhaps be extended still further to include the investigation of other incipient diseases which are slowly undermining the physical and mental efficiency of the growing generation.

To return to the school aspect of public health work:

[1] The creation of an Advisory Council was recommended by the Inter-departmental Committee on Physical Deterioration (1904). See Appendix II, E.

most diseases, and not merely those that are spread through infection, are preventable, and it should become more and more the duty of medical practitioners to prevent rather than to cure. To attain this object, there is need for the doctor to play an entirely new part in the schools. He must detect the hitherto unrecognized defects such as mouth-breathing, defective vision, carious teeth, discharging ears, rickets, anæmia, St. Vitus' dance, heart disease, all of which can be prevented or remedied. These diseases are unrecognized because the symptoms are unknown to parents and teachers. No particular remedy can be suggested without recourse to systematic health inspection of all children.

Up to the present time, there has been no organization for dealing with these conditions from the public health point of view, as they fall outside the purview of the medical officer of health, and belong to the general practitioner. But if the latter fail to recognize their presence, or if there is no family doctor, it obviously becomes a national duty to establish some new organization for the detection of such conditions. Their prevention is a factor of the utmost importance in any scheme for the improvement of the national physique.

The school is the nursery of the nation, and, by reason of the ignorance of the parents, this aspect of the whole question should be treated as an educational problem ; for the best way of combating physical deterioration is by means of physical education and by the instruction of teachers and children in

the elementary principles and essentials of healthy living.

The value of physical education very largely depends upon the age at which it is begun. 'We are taught to live when our life is wellnigh spent,' says Montaigne. But this ought not to be equally true in the twentieth century.

Nor again is physical education to be regarded as merely synonymous with physical training or physical exercises. It concerns the whole physical upbringing of children. The school is the nursery of the nation; and, owing to the ignorance of parents, children must be taught the most elementary habits of cleanliness—the use of a pocket-handkerchief, the habit of nasal breathing, the cleansing of teeth: in a word, they must be taught how to live healthy and cleanly lives.[1] These habits cannot be taught by the enforcement of sanitary laws or by health visiting at the home; but they can be gradually instilled by means of a practical system of education in the infant schools. Then the good effects of the natural reaction will be observed in the homes of the poor. Ignorance can only be conquered by sympathetic education, which is the function of the school. It can scarcely be overcome by the pious exhortations of social workers. Health visitors may be useful for the instruction of parents in a few practical points of hygiene in the home, but their work entails a great deal of wasted energy. No amount of advice or of benevolent effort can take the

[1] Cf. chap. vii, p. 83.

place of the demonstration and practice of personal hygiene and cleanliness in the schools. The health visitor, moreover, has no legal standing, and her welcome depends upon the courtesy of parents, whereas education both physical and mental is compulsory.

The general purport of this chapter has been to show that the growth and development of public health work has been so extensive that the present organization is inadequate to cope with routine health inspection. In order that the ideals and aims of the science of public health may be attained, extensive re-organization of the service is necessary, besides the institution of systematic health inspection at school.

The school doctor is the embodiment of a new idea. He is entering a new field, hitherto unexplored. He will find new duties and new opportunities : and with him will come many improvements in education. Consequently there is need from the outset for close co-operation on the part of teacher, parent, and doctor—to an extent which is only possible at school—in the physical upbringing of the children. Moreover, the whole subject of physical deterioration, though nominally included under public health administration, is in reality an educational problem.

CHAPTER VI

THE CLAIM OF THE INDIVIDUAL CHILD

Benefits to Individual Child.—Analogy from Secondary Schools.—Evil Results of Unrecognized Disease.—Short Sight.—Astigmatism.—Anæmia.—School Headaches.—Defective Teeth.—Ignorance and Neglect among the well-to-do.—Medical Inspection of Secondary Schools.—Gross Neglect in Poor Districts.—*A Fortiori* Case for Medical Inspection.—The Duty of Humanity.—The Claim of the Individual.

Systematic medical inspection at school has now been discussed from the points of view of the State and of the public health. There remains for consideration the claim of the individual child—a claim which is seldom fully appreciated. Quite apart from the children's value as a State asset, or as a factor in the public health, there can be no doubt of the individual benefits to be derived from a system of health inspection.

For the moment, an analogy may be drawn from the case of children in secondary schools. Their parents may be well-to-do, with a family doctor in constant attendance. The child's obvious needs and requirements are met ; he may be, to all appearance, the picture of physical health, and as regards educational progress he may be fully up to the average level of his class. But, none the less, he is afflicted with short sight, or with astigmatism, and no one has

realized the seriousness of his defect. In cases of astigmatism, from which a large number of school children suffer, neglect of this nature is particularly common. An astigmatic child frequently appears to have normal vision, and can generally pass an ordinary test of visual acuity. He can read the blackboard at school and may sometimes be recognized as endowed with unusually sharp vision. The symptoms of his condition pass unnoticed. He suffers from headache or from aching and watering eyes with inflammation of the eyelids. These symptoms result from the unnatural strain to which the eye muscles are subjected in order to secure adequate vision. Such a child requires careful attention at the hands of an oculist.

Even definite shortness of sight may pass unrecognized for many years. At school the child may have said he was unable to see the blackboard, and have been allowed to sit in front. At home his complaint is ignored. The more obvious results of his inability to see properly are ascribed to carelessness, or to innate stupidity : and it would be difficult to estimate the amount of misery that has been caused in this way to sensitive children. In secondary schools there are many such children, whose slight visual and aural defects pass unrecognized until it is too late. Although not sufficient to impair their usefulness as citizens, they affect their chances and opportunities in later life, entailing, as they do, diminished alertness and power of observation.

The case is the same in respect of defective teeth.

No attention is paid to a child's mouth until he complains of toothache. Even this complaint may be regarded by the more Spartan parents as a piece of affectation, and it is not until permanent injury is caused that the need for treatment is realized.

Anæmia, again, has its own tale to tell. How many children—especially girls—pass through a period of ill health owing to debility and anæmia, which is looked upon by their parents as a purely normal condition inevitable at the age of puberty. The doctor is not consulted except as a last resort. The languid, drowsy condition of the child may be ascribed to laziness, and the pale complexion, so far from being regarded as a symptom of ill health, is often referred to with pride by admiring relatives as especially beautiful. The child is pressed on to win a scholarship, though already suffering from general overstrain, or urged to take violent exercise, though troubled with constant breathlessness. The anæmia may be an expression of (1) general debility and malnutrition ; (2) circulatory changes at puberty ; (3) rheumatism ; or (4) tuberculosis. Each of these conditions should therefore receive careful consideration with a view to appropriate modifications in the routine of school life. Such children may or may not be materially impaired in health, but in all cases they experience unnecessary suffering.

School headaches, also, are commonly met with at secondary schools. Such headaches are frequently either undetected or ignored, though they require

special investigation at the hands of a school doctor—often a very difficult task. Headache may be the first sign of some acute infectious disease or may be due to temporary conditions such as overwork or want of adequate ventilation. On the other hand, it may result from constant overpressure or from some defect of vision. It may indicate the presence of dyspepsia or of some nervous disorder, or it may be a symptom of anæmia or malnutrition. Even decaying teeth or nasal obstruction by adenoid growths may cause constant headache in the school child. Any of these conditions, and even marked mental fatigue and overpressure, may pass unheeded. Therefore, it is due to the individual that some means shall be established for the discovery of these and similar unrecognized conditions.

Then again, the weakly, delicate, and strumous children with long silken eyelashes and 'beautiful' complexions—generally a sign of insidious disease—pass through school life inadequately cared for both educationally and physically. There are also a large number of spoiled and pampered children who, being subjected to much unnatural restraint and artificiality at home and in the school, become neurotic and delicate. These children together constitute a large group of individuals who, for their own sakes, require the kindly intervention of the school doctor.

The remedy lies first in systematic medical inspection, and secondly in the provision of a specially modified educational curriculum at open-air recovery schools.

The *régime* of such schools, even if limited to periods of six months, should be sufficient to restore the children to health, to lay the foundation of a good physique, and finally to lead to improved conditions of life at home.

If any further instances of these slighter defects are needed, it is only necessary to mention the importance of the early detection of slight curvature of the spine or deformities of the toes and feet, of which seldom any notice is taken, even by careful parents. But whatever the nature of the particular infirmity or defect, case after case will occur to the mind of any experienced observer, where well-intentioned neglect or complacent ignorance on the part of well-to-do parents has resulted in permanent deterioration, whether of vision, or hearing, or general physique.

The careful consideration of all these matters is of the utmost importance to the individual child. At the same time, these points serve as an almost incontrovertible argument for the introduction of systematic medical inspection at secondary schools.

In many of the preparatory and secondary schools of the well-to-do, the doctor has been a daily visitor for many years. But cases of accident and sudden illness have generally been the excuse for his attendance. In his capacity as school doctor he visits the sanatorium or infirmary, but not the classroom, the study, or the playing fields. He sees only those children to whom the master or mistress directs his attention. However, in one or two of the more modern and up-

to-date residential schools the responsible authorities have recognized the value of the doctor's services quite apart from infection and accident. In course of time, no doubt, their example will be followed in all secondary and preparatory schools.

If, therefore, in the schools of the well-to-do, systematic medical supervision is necessary for the sake of a neglected minority, how much more is it a duty of humanity to provide for the medical inspection of children attending the public elementary schools.

It requires no very intimate knowledge of the lives of those who dwell in the poorer districts of large towns to recognize that children's special senses, their eyes and ears, and even their very lives, are sacrificed through parental neglect or ignorance. For example, ill-nourished and weakly children often suffer from inflammation of their eyes—a condition which calls for careful attention from the first. Neglect results in an extension of the process of inflammation. An ulcer may be formed on the transparent membrane in front of the eye. In course of time the ulcer heals, but leaves a permanent scar which interferes with perfect vision. Sore eyes also, if neglected, may lead to serious injury, while neglect to remedy a squint generally results in complete loss of vision in the squinting eye.

The case is the same with discharging ears—a condition which commonly follows an attack of scarlet fever or measles. Neglect may lead to an extension of the disease to the cranial cavity, thereby imperilling

the life of the child. It should be a matter of common knowledge that pitiful examples of ignorance and neglect are met with daily in the routine work of the school doctor. In a word, the children of the poor are handicapped throughout life, not so much by their squalid surroundings, as owing to parental ignorance and obstinacy.

Physical and mental defects, sufficient to retard a child's educational progress and bring it under the cognizance of the State in the elementary schools, have already been considered ;[1] but there are many children with lesser defects, which only prove a hindrance in later life. For instance, there are about 10 per cent. with defective vision, 2 or 3 per cent. suffering from deafness, and many others suffering from anæmia and general debility, to say nothing of a large percentage with defective teeth. Who will deny these children all the benefit that is to be derived from medical advice ?

Surely it is better to prevent and to cure disease in infancy and childhood, than to seek to prolong life to 100 years or to support overcrowded Poor Law infirmaries. To bring medical aid and knowledge within the reach of the ignorant poor is to help them out of their slough : it becomes an education in itself. The school doctor cannot abolish all this ignorance and neglect, nor will he educate all the parents at once, but in the course of a few years a vast improvement will be noticeable if an adequate system of inspection is introduced.

[1] Cf. chap. iv, pp. 51–54.

Further, the teacher cannot do justice to any individual child without such knowledge of its mental, moral, and physical development as can scarcely be acquired without the doctor's help. A child in its early stages of growth and development is a composite structure, which only trained and experienced observation can hope to understand. And though the teacher may be able to form an adequate judgment of the child's general capacity, yet every schoolmaster will recall many a difficult case, in which he would have been glad of the advice of a school doctor interested in the study of child life.

For these reasons, systematic medical supervision of schools is necessary, for the sake of the individual child. It is ' the claim of the individual to be studied and treated with due consideration for his tendencies or idiosyncrasies, whether they are due to hereditary transmission or not. He asks that he may not, without due inquiry, be forced into the average mould in the matter of drugs, education, or employment ; that the personal equation may be noted as early in life as possible ; and that his anatomical and functional capacity may be regarded in the consideration of any questions likely to involve his health and well-being '.[1]

[1] *The Prevention of Disease.* Introductory chapter by H. Timbrell Bulstrode. Constable & Co., 1902.

RECAPITULATION

THE CASE FOR MEDICAL INSPECTION

The claims of medical inspection at school, in so far as they concern the State, the Public Health and the Individual have now been analysed; and the State control of a system of routine inspection has been substantially justified. Briefly to recapitulate the main points :—

1. The State requires a physical census of the children for the discovery of unrecognized defects, partly with a view to the improvement of the national physique, and partly with a view to the preparation of all children for school life. It is also a national duty to arrange for the classification of children according to their mental capacities, and to adapt the educational system to the requirements of the several groups of children, in order to diminish the present economic wastage of misdirected educational efforts.

2. It is the duty of local authorities to protect the individual against communicable diseases in school, to supervise school buildings, and to secure healthy surroundings for the school child.

3. Owing to ignorance, neglect, or apathy on the part of parents, it becomes a requirement of the merest humanity to bring medical aid and special educational methods within reach of the individual child.

These aims and ideals can only be attained by the introduction of a system of routine inspection of the children by medical men interested, not only in public health, but also in education.

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CHAPTER VII

THE GENERAL PRINCIPLES AND AIMS OF MEDICAL INSPECTION

Medical Inspection only one Branch of School Hygiene.—A Science of Education.—School Hygiene Defined.—An Unexplored Field.—Differentiation of Children.—Physical Education.—Teaching of Hygiene.—The Apperception of Education.—Routine Medical Inspection: (*a*) of Schools; (*b*) of Scholars.—Their Hygienic and Educational Aspects.—First Examination superficial.—Second Examination more searching.—Co-operation of Teacher and Doctor.—Outline of General Advantages.—Objections.—Fundamental Definition of Medical Inspection.

Medical inspection of schools should have been the first step in any compulsory system of State education. In England it is almost the last. The past generation of educationalists had few ideas beyond that of teaching reading, writing and arithmetic to all and of training the more intelligent children to win scholarships. There was no idea of educating each child to play his part as a citizen of the State. In consequence the one essential step was overlooked and educational progress has been conducted on wrong lines for many years. Now it is necessary for educationalists to retrace their steps and to begin again from the beginning. As a result of this inverted method of progress, education has become a highly complex and involved subject. Development has been one-sided and there has been a singular absence of clear thinking.

Hence it is that three chapters of this book have been necessary for the adequate analysis of the subject of medical inspection at school and for its justification as an integral factor in any educational system—a justification that should have been obvious to educationalists thirty or forty years ago.

For our purposes school hygiene may be regarded as the latest development of education in its more comprehensive aspects. So that medical inspection, rightly considered, so far from being an end in itself, is actually but the initial step in a great scheme of progress—a scheme which involves the improvement of the existing conditions of mental, moral, and physical development of the children. The scheme also aims at the prevention of disease in childhood, and at raising the standard of the national physique. Its final goal is the development of a science of education itself. These aims are definite and practical and may be summarized under the following heads :—

1. Routine medical inspection.

2. Physiology and psychology of ordinary educational methods and curricula, including fatigue, neurasthenia, hysteria, questions of sex, &c.

3. Special educational methods for abnormal children of all the many different types—the mentally and physically defective, the dull and backward, the blind, deaf, and the debilitated, &c.

4. Scientific supervision of school methods, *i.e.* of nursery schools, school furniture, buildings, baths, douches, ventilation, lighting, &c.

5. Physical education, including supervision of manual training, gymnastic exercises, organized games, dancing, &c.

6. Teaching of hygiene to teachers and others, and lastly,

7. Prevention of infectious diseases and attention to the sanitary condition of the premises.

These together constitute a special group of medical, pedagogical and educational factors known as school hygiene. This is a convenient term, but school hygiene is as far removed from general hygiene as surgery is from medicine. There is, naturally, a common meeting ground, but generally speaking the problems of school life must be approached in a different light and with a different mental attitude from those of ordinary hygiene and sanitation. Nor in this instance is the part necessarily less than the whole, except in the same way and to the same extent that surgery is merely a branch and a part of medicine.

Each of these headings merits consideration, but they can only be very briefly dealt with here. The physiology and psychology of ordinary educational methods is, to all intents and purposes, an unexplored field, full of possibilities and suggestions. Something is known about the growth and development of the child's brain, but the educational system has not been adapted to the biological requirements of the child at different periods of its growth and development. About the manifestations of overpressure, neurasthenia and hysteria in the school child, little is known; still

less about fatigue in its relation to school work. Much research work remains to be done before approved educational methods can be established. Only when the fundamental truths of the physiology and psychology of the school child have been accurately defined, can an educational system, which will be satisfactory in all respects, be based on the sure foundation of these truths.

Secondly, the differentiation of types of children has begun. There are the physically and mentally defective, the dull and backward, the blind and deaf. But the problem of their educational treatment has scarcely been faced. Yet the economic saving of such a course becomes obvious, when the subject is considered from the following standpoint. The purpose of education is to fit each individual child to play its part as a good and efficient servant of the State to which it belongs. As there are different types of children, so there must of necessity be educational systems to suit each type or class of child. The educational treatment of children according to their mental and physical capacities effects a great economic saving by which the State profits on the one hand and the child on the other.

Thirdly, there is the subject of physical education about which so much has been said and written. First one theory holds the field, then another. Some believe only in physical exercises, others only in organized games, and others in both. But while amateurs dispute, there is at least room for the open-minded doctor and educationalist to give advice as to practical methods

of physical training, and as to the educational value of manual training at certain ages as well as of dancing and singing. All of these may be made interesting to the children and may be educationally valuable, which is anything but true of the dull, lifeless exercises and practice in dancing and deportment that are taught in many schools.

Fourthly, there is the consideration of teaching hygiene to both children and teachers. It would appear to be easy enough to introduce into the time-tables an hour or so for instruction in hygiene. But hygiene is a difficult subject to teach, and those who are to teach it must themselves be taught. First of all the teachers must acquire definite knowledge of certain anatomical and physiological facts : they must also be taught how their knowledge can be applied to the practical problems of hygiene and education. They must be instructed in the theory and practice of physical training. But though this elementary knowledge will be useful by itself and is necessary to enable the teacher to appreciate the doctor's suggestions and directions, yet it is still more essential that teachers should themselves acquire a broader sense of perspective, a wider outlook, an altered mental attitude, so that they can approach the problems of education and school life from the scientific standpoint. This habit of mind, this apperception, cannot be acquired by the learning of facts, but by an improved system of education in the training colleges. Then and not till then will it be possible for teachers to

instruct children in the elementary principles of healthy living and to instil into their minds an interest in physical training and in personal hygiene.

Each of these branches of school hygiene requires more detailed consideration than it is possible to give in the limits of this book. The subject of routine inspection alone will be considered at full length. It is the first step in virtue of which the doctor has claimed official recognition in the school world as a servant of the State. This point of view has already been maintained in a previous chapter. It remains now to recapitulate the general principles of systematic inspection, and at the same time to introduce certain incidental factors, with a view to drawing up an ideal scheme of organization.

Routine medical inspection may be practically divided into the inspection of schools and the inspection of school children, and each of these may be subdivided according to its hygienic and its educational aspects. The distinction between inspection of schools and inspection of school children is purely arbitrary, but it is convenient.

Medical inspection of schools in its hygienic aspect consists chiefly in criticizing and approving plans of new school buildings as to ventilation, lighting, heating and sanitary accommodation ; and in suggesting, as far as practicable, remedies as regards these things in old buildings erected without medical advice. There are already a considerable number of accepted rules for school architecture and sanitation upon which the

school doctor can base his opinions. Yet there is room for much careful observation and experiment as to methods of building as well as of lighting, ventilation and heating. Therefore a medical inspector should undertake this part of his duty with an open, unprejudiced mind and should be ready to co-operate with the architect and sanitary engineer.

In its educational aspect, routine medical inspection consists in the supervision of school curricula and general methods, more especially in the infant schools. It is essential that more discretion should be exercised in drawing up school time-tables so as to secure a correct proportion of recreation and physical exercises between the hours of mental stress, and so as to ensure a satisfactory sequence of subjects in the course of a school session. Little attention has been given to these matters, and it will become one of the duties of a medical inspector to discuss these points generally with the teachers in relation to whole classes as well as to individual children. Certain occupations must be abolished altogether from the infant schools, while more manual work might be introduced with great advantage into the lower standards of the elementary schools.

In every school, in fact, the time-tables should be signed by the school doctor as well as by the ordinary inspector of schools. There is also need for better judgment in the choice of pens, paper, ink, blackboards and other school materials. These things may appear insignificant, but they are all important in practice;

and it may be said with truth that, owing to want of medical advice in the past, spinal deformity, eye-strain, overpressure, and 'brain-fag' have been caused. No one but a medical man—and a medical man with special educational knowledge—has the proper training to decide what in these matters is hygienic and what is not. Unhygienic conditions and faulty methods, approved by the 'expert' who does not know, have existed long enough; and only now that the doctor has found an entrance into the schools have they been recognized with any prospect of eventual remedy.

Medical inspection of the children in its hygienic and in its educational aspect has been dealt with in considerable detail already. It consists in the superficial examination of all children on their admission to school as to cleanliness, obvious defects such as squints, deformities, and ear discharges, as to their general fitness for school life, and as to their previous medical history. Measurements of height and weight may also be taken if considered necessary.

This first examination should, if possible, be conducted in the presence of the parents. No children who are in an uncleanly state or suffering from verminous and parasitic conditions, or who are in other respects unfit for school life, would be admitted; the previous medical history of every child would be obtained; and the attention of parents would be called to obvious and gross defects needing immediate attention, such as squints and defective teeth. There is no need for any examination of vision or of mental capacity, as

infants are generally admitted to school at five years of age, and a very large number are also brought at three or four. Any more thorough examination at this early age is impracticable and may be less useful than is generally supposed. For the rest, all children in the infant schools should be kept under systematic medical supervision at least once a term, with a view to early detection of disease.

At the time of promotion of the children from the infant schools, say at seven or eight years of age, it would be necessary for the school doctor to hold a more searching examination. There would be no necessity for the presence of the parents :[1] the children would have grown accustomed to their surroundings, to the teachers, to the school nurse, and even to the doctor himself. It would be advisable to devote ten minutes or a quarter of an hour to the examination of each child. It would be advantageous if the rough testing of the children's vision had previously been undertaken by the teacher, and if the measurements of height and weight had been entrusted to the nurse. This would give the doctor additional time to estimate the physical and mental characteristics of the child and to investigate any abnormal conditions. With the co-operation of the head teacher, the doctor should be in a position to decide what special educational system is adapted to the child's requirements. For instance, if the child were normal, he would be allowed to proceed to the elemen-

[1] It is advisable that a third person should be present at any examination of school children.

tary school: if dull and backward, he would be recommended for transference to a special class, or to a lower grade school where manual work and oral instruction would be more in evidence than at the ordinary schools. Similarly, if the child could be certified as mentally or physically defective under the Elementary Education (Defective and Epileptic) Act, 1899, he would be recommended as a suitable case for admission to a special school.

At this examination, also, the doctor would make a careful investigation as to defective vision, discharging ears, deafness, adenoids, teeth, &c., and would issue printed instructions to the parents as to the necessity for seeking further medical advice. The doctor would also examine thoroughly as to the condition of the child's heart and lungs. The nurse would meanwhile investigate carefully the child's freedom from verminous and parasitic conditions. As a result of this examination it would be possible for the doctor to complete the child's medical register or schedule.[1]

In addition to this detailed examination, routine supervision of all the children in the different classes should be undertaken at least once a term, to call attention to any defective conditions and to give the teacher the advantage of consulting the doctor about any special cases. It is this co-

[1] Cf. also chap. x, p. 166. It would be better to have cards of a different colour for the normal children and for the abnormal who require further supervision. In Germany abnormal children are given pink cards and are labelled *Unter Kontrolle*.

operation of the teacher and doctor in the school which is essential for the improvement of our educational system. At first teachers may be apt to view the interference of the doctor and the additional duties thereby imposed on themselves with prejudice; but as soon as they grasp the meaning and importance of the work they will at once begin to take personal pride and interest in the physical welfare and cleanliness of the children. The beneficial results may be increased if a medical register is kept in each classroom for notes by doctor, nurse, and teacher. Friendly relations can also be established by means of informal lectures and conferences.

The general advantages of systematic health inspection far outweigh anything that has been urged against its introduction. The doctor is admitted as a member of the school staff, and by him the foundations of the elementary principles of school hygiene may be securely laid in each school, leading eventually to the development of a science of education.

The school doctor's work is medical, psychological, and pedagogical. It is difficult to say where it should definitely begin or end. He helps the teachers in their work and is a powerful influence, educating both teachers and parents in the essentials of healthy living. At the same time he exerts both directly and indirectly a beneficial influence upon the physical, mental, and moral development of each individual child. Delicate and backward children are kept under medical supervision. The regularity of attendance at school is

increased. And, finally, all educationalists are stimulated to a sense of their duties and responsibilities ; and all this is effected in addition to the fulfilment of the fundamental requirements—the discovery of unrecognized physical and mental defects among the children.

This is but an outline of the general advantages. On the other hand, nothing has been urged against medical inspection but the individual prejudices of a few teachers, the interference with school routine, the undermining of parental responsibility, and the expense. The first three of these objections have been raised only in ignorance of the true conditions and without any understanding as to the real meaning of education. The plea of expense can be answered in two ways. Firstly, no amount of money that is spent in perfecting an educational system should be regarded as misspent or unreasonably be withheld. Secondly, the economic gain that will follow from improved health conditions and enhanced educational results will far outweigh the infinitesimal cost of systematic medical inspection.

In conclusion, the fundamental idea of medical inspection may be emphasized in a few words. It implies more than the appointment of a medical adviser to local education committees, more than the prevention of infectious disease in schools, more than a spasmodic attempt to deal with such problems as defective vision, ventilation and sanitation of

schools, and more than the separation of mentally and physically defective children. It involves the systematic inspection, from a medical point of view, not only of the school premises, appurtenances, and methods, but also of the children. It implies that every teacher, in dealing with the difficult problems of school life, may have the advantage of medical guidance; and that every child, normal or abnormal, healthy or unhealthy, may have the advantage of being inspected by a medical man once or twice during school life and at such other times as may be necessary.

This constitutes the fundamental definition of medical inspection of schools, forming, as it does, only one branch of school hygiene.

CHAPTER VIII

SCHOOL HYGIENE AS A FACTOR IN STATE MEDICINE.

Organization of a Central Department

School Hygiene the Newest Branch of State Medicine.—New Wine and Old Bottles.—Hasty Legislation.—Local Authorities Unprepared.—Letter and Spirit.—State Medicine Defined.—An Incongruous Medley.—A Ministry of Public Health.—Different Methods of Organization.—Fallacious Arguments.—Co-ordination and Subordination.—School Hygiene a Branch of Education, not of Public Health.—Medical Bureau at Education Department.—Its Function.—A Centre for the Acquisition and Distribution of Knowledge.—Knowledge and Information.—Staff at Present Inadequate.—A Model Department.—Pioneer Investigation and Research.

From ignominious obscurity, school hygiene has been suddenly thrust into prominence as the newest branch of State Medicine. It must, therefore, be fitted gradually and unobtrusively into the established order of things. Unfortunately, in the case of every new organization, there is always a tendency to look back in order to see how the new can be temporarily adjusted to suit the old with the least trouble and inconvenience, rather than to look forward and consider the possibility of further development upon new lines. New wine is seldom adapted to the capacities of old bottles. Nor can school hygiene, concerning as it does both medicine and education, ever be regarded for administrative purposes as an independent section. Space and opportunity for expansion are essential.

When the demand for health inspection was first raised ten or twelve years ago, even the more advanced educationalists were, for the moment, content to offer any plea that seemed to justify their cry. Groping in the dark, without any real insight into the difficulties that would inevitably be involved, they made little effort to arrive at any accurate analysis of the situation, or at any reasoned statement of their own case. They were voicing an instinct, and only in a very secondary degree following the dictates of their judgment. In course of time, as has been already shown, the recommendation found support in the reports of Interdepartmental Committees; and as a result of careful inquiries, additional needs began to secure recognition. The demand became insistent, and at last found expression in legislation. By the Education (Administrative Provisions) Act of 1907 the Government created compulsory powers for systematic medical inspection; whereupon the Board of Education at once devolved a sum of new responsibilities upon local authorities quite unprepared to cope with them.

Partly through a desire to avoid innovation and to utilise only existing agencies, partly through a misconception of the term 'school hygiene', the scheme which was originally advocated at head quarters fell short of its object. It failed to recognize fully variations in local conditions and requirements, and showed little appreciation of the manifold possibilities of development in the near future.[1] Local authorities

[1] Since these remarks were written, the Board of Education, thank

have to a considerable extent, and not unnaturally, proved unequal to their responsibilities. They seek to interpret the letter rather than the spirit of the law.

The whole situation is typical of the administrative methods peculiar to this country. We may contrast the manner in which health inspection gradually became an established fact in the schools of Germany, Sweden and Switzerland.[1] In these instances progress was, generally speaking, the outcome of local demands stimulated by sympathetic interest and guidance on the part of some central authority. Had we not disdained to follow in the same path, the first step in this country might have been the institution of a campaign to educate public opinion as to the necessity of health inspection. A further step might have been to make the grant for efficiency in the case of every school conditional upon a medical man's name appearing in the capacity of school doctor upon the roll of school officials. Again, in large towns Education Committees might have been urged to employ the services of a medical superintendent of schools. In these and similar ways an organized system of school hygiene would by degrees have been tentatively evolved throughout the country—always under sympathetic guidance and supervision from the Board of Education. Nor need there necessarily have been any recourse to Parliamentary legislation; the ordinary

to the efforts of Dr. George Newman, have issued a further memorandum which deals with school hygiene in its broadest sense and which shows full appreciation of the possible developments of the subject. See Appendix II. C.

[1] *School Doctors in Germany*, p. 30. Board of Education pamphlet.

Education Code, supplemented by special memoranda from time to time, would not have proved inadequate.

The contrast with the actual situation now before us is sufficiently obvious. After a prolonged period of general and complete inaction, broken only in a few favoured districts by enterprising Education Committees, a compulsory system has been enforced by Act of Parliament—with the natural result that the demands of systematic health inspection are considered excessive and impossible; while, in most places, neither the organization nor the resources which are forthcoming are sufficiently adequate.

Professor Burgerstein, of Vienna, commenting upon the position of school hygiene in England,[1] says, 'As things stand at present, the English school hygiene law will in practice be of little effect, as has been the case in other great countries, for example, France and Portugal: and England does not seem to have learnt anything from the experience and mistakes of other countries. . . . If people go to the trouble of putting legal machinery into motion, it should not be done without some guarantee for a sweeping measure of success. And this is what we miss in the procedure which has been adopted in England.'

For the time being school hygiene is regarded as one of the less important elements in the rather motley congerie of public services, grouped together under the term State Medicine, which includes the following diverse branches of medicine:—

1. Lunacy.

[1] *Zeitschrift für Schulgesundheitspflege*, xxi, 1908.

2. Sanitation.
3. Public Health.
4. The Poor Law Medical Service.
5. Alien Immigration.
6. School Hygiene.

Apart from the Poor Law, municipalities are held responsible for the clinical treatment of infectious diseases, thus necessitating, in large towns, a separate service from that of the medical officer of health. In addition the Home Office is directly responsible for the discharge of statutory obligations as to factories and the Local Government Board as to vaccination, each appointing local medical men as their representatives: whilst a number of local medical men such as Post Office doctors are pressed into the service of the State for the examination of candidates for the Board of Education Superannuation Scheme, or for admission to Government service. Thus, in the absence of a central department of State Medicine, there is a lack of systematized co-ordination between the various public medical services. For instance, the local sanitary and public health authority, though responsible for the prevention of infectious disease, has no direct control over the public vaccination service; and though the medical officer of health is responsible for the knowledge and supervision of occupational disease, yet he has no concern in the duties of the certifying factory surgeon or of the inspector of factories.

The following table illustrates the present condition of medley and chaos.

Date of State Control.	*Subject.*	*Responsible State Department, or Central Authority.*	*Local Administrative Committee.*	*Local Executive Officers.*
1752	Quarantine.	Board of Customs and Local Government Board.	Customs and Port Sanitary Committee.	Customs Preventive Officer and Port Medical Officer.
1774	Mental diseases.	Commission in Lunacy and Home Office	Asylum Committee.	Medical Superintendent.
1847	Poor Law Medical Service.	Local Government Board.	Poor Law Guardians.	Superintendent of Infirmary and Parish Doctors.
1848	Sanitation, Public Health and Food Supplies	Local Government Board and Board of Agriculture.	Sanitary Committee.	Medical Officer of Health, Public Analyst, Board of Agriculture Inspectors.
1854	Vaccination.	Local Government Board.	Poor Law Guardians.	Public Vaccinators.
1866	Fever Hospitals.	Local Government Board and County Councils.	Metropolitan Asylums Board or Isolation Hospitals Committee.	Special Medical Superintendent or Medical Officer of Health.
1878	Factories and Workshops.	Home Office and Local Government Board.	Sanitary Committee (for Sanitation).	Home Office Inspectors, Factory Surgeon and Medical Officer of Health.
1898	Elementary School Teachers' Superannuation.	Board of Education.		Post Office Doctors or General Practitioners.
1902	Midwifery.	Central Midwives' Board.	County Council.	Superintendent of Midwives.
1906	Alien Immigration.	Home Office.	Immigration Board.	Port Medical Officer.
1908	School hygiene.	Board of Education.	Education Committee.	School Medical Officer.
	Medical Statistics.	General Register Office.		Medical Officers of Health, and Registrar.

In this incongruous and uncompromising medley school hygiene has to take its place as the newest branch of State Medicine. It is not surprising that there has been some difference of opinion as to the best method of organization.

At one time it was seriously argued that medical inspection of schools was merely a subordinate part of public health and that the aims and objects of health inspection concerned medical officers of health and sanitary committees, only incidentally becoming a matter for the consideration of education authorities. This argument was strengthened by the special prominence that has lately been given by certain sanitary committees to considerations of home hygiene and health visiting. The home is regarded as the point at which the ultimate hygienic control of the child is to be maintained. But this point of view is far in advance of anything that has been intended, or provided for, in any of the Education or Public Health Acts. Moreover, its importance has been somewhat exaggerated, as some medical officers of health refrain from advising their sanitary committees to appoint health visitors. Neither the medical officer of health, nor the school doctor, has any legal standing or control with regard to matters of health visiting and it is inadvisable to push this point of view too far.[1]

The fallacy of these arguments was soon exposed, and it was shown that although school hygiene is undoubtedly an integral factor in the health of the

[1] Cf. chap. v, p. 68.

nation, it is also a very important factor in the educational system. In other words, experience proved that school hygiene should be regarded as co-ordinate with, and not subordinate to, public health, and that both branches of State Medicine could be administered side by side without fear of friction or of overlapping of function on the part of the executive officers. The school doctor naturally will place his records at the disposal of the medical officer of health, and both will necessarily work together in the case of public health problems.

Another point of view was that, although education was essentially distinct from public health, yet for administrative purposes and to avoid dual jurisdiction it would be well to subordinate the educational requirements to those of public health and to allow both branches to come under the administration of one man—the local medical officer of health. This argument arose from a laudable desire to place the medical services of the country upon a broader basis with a view to securing progressive unification. But the end should not be sacrificed to the means. Education is too important a subject to be subordinated to other interests. At present in all large towns there is ample scope for two medical officers—the one responsible for hygiene and sanitation, and the other for schools and scholars. For under hygiene and sanitation is included the consideration of :—

1. Water supply,
2. Sewage disposal,

3. Housing of the people,
4. Milk supply, food inspection,
5. Infectious diseases, &c.,
6. Tuberculosis,
7. Occupational diseases,
8. Infantile mortality, and
9. many other problems.

The two officers should be co-equal, each representing totally different interests but meeting on the common ground of home hygiene and infectious diseases.

If it be not for *practical*, but for administrative, purposes that unification is desired, then what is needed for every large town or county borough is one Principal Medical Officer (not necessarily the medical officer of health), who should be responsible for the co-ordination of all the co-equal but totally distinct branches of State Medicine. This arrangement secures the right perspective and proportion. The medical officer of health is not the only representative of State Medicine, and whoever proves himself the greatest administrator should necessarily have the opportunity of becoming the principal medical officer—the representative of the State or of a Supreme Board of Health.

The last chapter was devoted to an explanation of the aims and objects of medical inspection of schools ; and incidentally attention was drawn to the fundamental principles of school hygiene. So intimate is the association of health inspection and school hygiene that no adequate system of medical inspection can be organized unless at the same time provision is

made for the various branches of school hygiene. Nor is it possible to adopt the principles and practice of school hygiene without at the same time instituting an adequate system of routine health inspection. It is a shortsighted policy to attempt to establish the one without the other.

School hygiene is a branch of education, as surgery of medicine. But school hygiene is no more a branch of 'public health' than anæsthetics is of surgery.[1] The surgeon and the anæsthetist meet on the common ground of the operating theatre. Both work together and, if there is to be any good result, they are mutually dependent the one on the other. So with the medical officer of health and the school doctor. They meet on the common ground of the school, and the medical officer of health should welcome the school doctor as an ally, not as a mere subordinate. There should be neither friction nor overlapping of function.

Organization of a Central Department

A scheme of organization which is likely to ensure effective results must now be considered. The ultimate administration very properly has been left in the hands of the local authorities and this aspect of the problem will be considered in detail later : but there must first of all be adequate provision for a central authority to supervise and to direct. If there were a Minister of Public Health at the head of a Govern-

[1] Health inspection at school may be regarded as a branch of public health, but health inspection is not school hygiene.

ment Office responsible for all branches of State Medicine, the control of medical inspection would naturally constitute one of the functions of a sub-department of school hygiene—such as may be found in the Argentine Republic, Australia, and in other countries—working in close association with the Board of Education. But these considerations take us too far into the future; and it is hardly wise to dwell upon such a hypothesis until it has come within the range of practical politics. It is an ideal which should be kept in view, and present plans should be laid accordingly so that, when the time comes, at least this branch of Administrative Medicine—namely School Hygiene—may be complete in itself and ready for absorption into the greater whole. For the present, attention must be confined to a more immediate and practical scheme of organization, and the question of supervision is all important.

It was at one time suggested that the Local Government Board should be made responsible for school hygiene, as it was the health aspect of the problem which attracted most attention and gave rise to all the speculations concerning physical deterioration. But such a scheme was opposed to the obvious intention of Parliament. The provision for medical inspection of schools was embodied in an Education Act which was to be construed as one with all the other Education Acts from 1870. Moreover, the Local Government Board, in spite of its small medical department, does not in any sense represent a national Board of Health.

And as the matters connected with medical inspection and school hygiene concern the very objects for which the Board of Education was constituted, it would obviously have been a shortsighted policy to transfer the administration to the Local Government Board. Though possibly a satisfactory scheme might have been established for health inspection and for a physical census of the children, yet there would have been no guarantee whatever of any advance in education, which is in itself one of the chief objects of school hygiene. Accordingly a medical department has been established at the Board of Education.

The Education (Administrative Provisions) Act, 1907, clearly defines the duties of the Board of Education with regard to medical inspection.. The Board in the first place should advise and direct local education authorities as to the manner in which they are to carry out the provisions of the Act; and, secondly, they must consider and sanction arrangements for attending to the health and physical condition of the children.

The function, however, of any central department of school hygiene, and in England of the medical bureau at the Board of Education, is partly administrative, but chiefly consists in providing a centre for the acquisition and diffusion of knowledge. This knowledge must, to a large extent, be the result of actual first-hand experience. Information by itself is likely to be misleading. 'In the capacity to differentiate between information and knowledge lies the essence of what may be called sagacity in counsel.' Without this knowledge and practical experience, the

central authority can scarcely be in a position to advise or direct local authorities. Another function of the medical bureau is to study and to digest the reports of the various local authorities and to submit to Parliament a carefully considered statement of the practical results of medical inspection, as well as any further recommendations that may be necessary for future action. To these ends a model department must gradually be built up, as free as possible from the trammels of precedent. Medicine and education are both still at an early stage of evolution, and cannot afford to be hampered by red tape.

In no country as yet is there an adequate State department of school hygiene. But some countries, where modern civilization is only a development of recent date, as for instance the Argentine Republic, Japan and Australia, have laid the foundation of such a department upon broad lines, with a view to future extension and to co-ordination with public health work. Thus in Argentina there is a School Medical Board, acting as a special department of the National Council of Education. It was appointed in 1888, and consists of a president, a vice-president and fourteen members. In addition there is a special staff, consisting of a chief, eight inspectors and a lady doctor, to deal with the secondary and higher schools. Unfortunately the members have to undertake routine inspectorial duties, and are prevented from devoting as much time as they desire to research and special inquiries. But they have formulated the outline of a satisfactory scheme.

In Japan a number of specialists have been appointed by the Department of Education to advise the local school physicians as to their duties and methods. With regard to the collection and digestion of statistics, considerable difficulties have been encountered.[1]

In England the medical department at the Board of Education for the moment consists only of a chief medical officer and two assistants, one of whom has for many years paid special attention to defective children, and the other—a lady doctor—to training colleges and the teaching of hygiene. There is need for a considerable increase of staff. The general guiding principle of appointments should be that medical men and women are required for research, with a view to their becoming specialists in particular branches of the work. At present, where all is either ignorance or speculation, there is room for knowledge and investigation; and special inquiries should be made into the methods and experience of certain foreign countries, which are in some respects in advance of this country.[2]

[1] 'The results are not quite satisfactory. This is owing either to the want of skill in preparing statistics or to the lack of experience on the part of physicians. In spite of much correspondence, doubtful points have not yet been cleared up. Still time will make the required improvements.' (*Annual Report of the Minister of State for Education*, Japan. 1907.)

[2] Even in 1906, Mr. Birrell, the Minister of Education, speaking in the House of Commons said, 'The Board of Education was equally willing to receive inspiration from the House in the direction of strengthening its medical staff at head quarters for the purpose of seeing that the local authorities are discharging their duties, and also to keep in touch with what was going on in continental towns.'

The chief medical officer will from time to time require reports upon special subjects from his assistants, and, being appointed for supervisory and administrative purposes, he will be in a position to retain the breadth of outlook and the sense of proportion which are necessary in order to prevent excessive specialization, or the introduction of medical faddism—a fear which has already found vague expression in certain quarters. But such tendencies can also be obviated by arranging for the medical experts to visit foreign countries, and also by allotting to each of them some general inspectorial work, in addition to the special work of his own branch. Moreover, it is not necessary that all the assistants should be medical men. Statisticians are wanted to help in the collation and digestion of statistics. There is also great scope for scientific research and inspectorial work by those who have already gained practical experience as teachers.

Although such a medical department must be the outcome of a gradual development, yet at the present time a very considerable increase in the staff is essential. A medical expert is wanted who will study as his own particular province all that is to be learnt in connexion with school architecture and equipment and as regards problems of school ventilation, lighting and heating, from the medical and educational points of view. He should also acquire an up-to-date knowledge concerning school baths, desks and furniture. Such points open up a wide field for inquiry; but there is immediate need for such an expert authority to confer with school architects and sanitary en-

gineers and to issue instructions and advice to local authorities.

Similarly, a medical expert is required to study various methods of physical training, to confer and combine with the experts on the same subject at the Admiralty and War Office, and to supervise or co-operate with the staff of inspectors which is already employed by the Board of Education. In this branch also assistants should be included for the study of hygienic and educational methods of manual training. There is already a branch of sub-inspectors of manual training at the Board of Education, but so far no special knowledge as to hygienic requirements has been necessary. Nothing but good can result from the active co-operation of the medical expert with these inspectors in the interests both of medicine and of education.

Again, adequate knowledge of medicine and school hygiene is indispensable for the proper supervision of infant schools and of the 'nursery schools' recently recommended by the Consultative Committee of the Board of Education.[1] This is essentially a department of the work in which there is need for some departure from the traditional requirements of discipline and routine and in which there is great scope for individual activities on the part of the teachers, always under the sympathetic guidance and supervision of inspectors who know and understand their subject. Further, the present system of inspection of mentally and physically

[1] *Report of Consultative Committee upon the School Attendance of children below the age of five*, 1908.

defective children requires vast extension, and more assistants are needed for research and inquiry into special educational methods for different groups of children.

Then, again, the Board of Education has no special knowledge about the incidence, or the methods of the spread, of infectious disease in schools. This subject demands careful investigation on the part of medical men who can devote time to the work. The Board of Education will scarcely be expected to lay down exact rules for the exclusion of children or for the closure of schools, until they have made a study of this matter by means of special inquiries.

Further details and elaboration are unnecessary, but the immediate requirements of the medical department may be illustrated by the following table :—

Chief Medical Officer.

- Medical Adviser as to Physical and Manual Training.
  - Staff of Inspectors.
- Medical Adviser *re* School Buildings and Equipment.
- Medical Adviser *re* Instruction in Hygiene at Training Colleges and Secondary Schools and to Teachers.
- Medical Superintendent of Defective Children.
  - Staff of Inspectors of Special Schools.
- Superintendent of Psychological Research and of Special Educational Methods.
- Medical Inspector of Nursery Schools, Infant Depts., Open-air Schools, &c.
- Medical Adviser *re* Infectious and Contagious Disease.
- Superintendent of Medical Statistics.

Thus a model department would consist of a chief medical officer (who, if necessary, should have direct access to the responsible Minister of Education), and of ten or more assistants for different branches of the work, with a small staff of inspectors. There must be provision for the chief and for his assistants to co-operate closely with inspectors and officers in other departments of educational work, with a view to general co-ordination and improved methods of administration, as well as to building up gradually a science of education.

The reason for this large staff of medico-educational experts is obvious. At present no one is possessed of accurate knowledge, and it is wrong for any medical man in an official position to recommend, or condemn, a system of progress in educational hygiene solely upon hearsay evidence and secondhand information. For it is imperfect knowledge at head quarters which is mainly responsible for the mistaken and faulty systems which are so constantly perpetuated.

At the same time and concurrently with the formation of this medical department, the present staff of inspectors should be reinforced by men possessed of special insight into the requirements of educational hygiene. It would be advantageous if a certain proportion of H.M.'s inspectors of schools had had previous medical training. In this way it would be possible to recruit the staff of the medical department from men already in the office, who had gained some experience in the field of education. Education is

the most difficult of all arts, and previous medical training can only be productive of good in educational work.

A constant search after knowledge and truth should be the basis of the work of any central education authority. Pioneer investigation and research in the field of school hygiene should be required of all assistants in the medical department. It is work of national importance, and should no longer be left, as in the past, entirely to the zeal of local authorities. In this and in other ways a medical department at the Board of Education would become a centre for the acquisition and diffusion of knowledge and would be in a position to advise and direct local authorities in all matters relating to educational hygiene.

NOTE. — The following statement by Dr. William H. Maxwell, City Superintendent of Schools of New York, just published in *Medical Inspection of Schools* by Gulick and Ayres, concerns the argument contained in the earlier part of this chapter.

'Dual responsibility in the school—that of the Board of Education and that of the Department of Health—always has resulted, and always will result, in confusion and inefficiency in the work effected. It is owing to this dual responsibility that the large annual appropriation made by the city for the physical examination of school children is to a great degree wasted. Efficient service will be obtained only when the Board of Education is made responsible for all the work that goes on in the schools.

'The physicians employed by the Board of Health do not perform any of the functions which it is highly advisable should be performed by a truly educational department of hygiene, such as studying hygienic conditions in the schools and advising teachers regarding the pedagogical treatment of children in cases of fatigue and nervousness.'

CHAPTER IX

LOCAL ORGANIZATION OF SCHOOL HYGIENE

General Aims.—Local Conditions and Requirements.—Scope for Variety.—Slow and Unobtrusive Progress—Expert Knowledge essential. —Large Towns.—Medical Superintendent of Schools distinct from Medical Officer of Health.—His Duties.—School Districts.—Local *v.* Itinerant System of Inspection; Advantages and Objections.—Illustrations: Boston, Paris, Berlin, Wiesbaden and London.—Permanent and Temporary Staff.—School Doctors, Assistant School Doctors, and School Nurses.—Small Towns: Medical Officer of Health also School Medical Officer.—Rural Districts: Four main schemes and Summary.—Financial Considerations.—A National Charge.—Small Outlay.—Phantom of the Ratepayer.—Standard of Remuneration.

THE last chapter dealt with the organization of an adequate controlling and supervisory department, whose functions would be to acquire an up-to-date knowledge of school hygiene, to investigate the progress of thought and discovery in other countries, to be in a position to guide and direct local authorities as to their obligations, and finally to collate and make practical use of the reports and statistics resulting from routine inspection.

The ultimate administration of health inspection and of school hygiene has been left in the hands of local authorities. The immediate application of a scheme of organization must be based upon the provisions of the Act and upon the several circulars

which have been issued by the Board of Education;[1] but its general aims should from the very outset be directed towards the fulfilment of the main purposes of school hygiene :—

1. To improve the mental, moral, and physical development of the children.

2. To educate teachers, parents, and children in the elements of healthy living.

3. To protect the individual from communicable diseases by the prevention of infection and by the cleansing of all verminous and parasitic conditions.

4. To institute a scientific study of child life in its educational aspects.

These objects will be readily attained by any system which provides for the statutory examination of all children once or twice during school life, for the more frequent examination of special cases—some by doctors, others by nurses—for systematic lectures to teachers and conferences with parents, and for the appointment of medical men in the larger towns for the special study of educational problems. An adequate scheme of organization admits of great scope for variety to suit local conditions and local requirements.

Three different schemes will be considered in their application to :—(1) Large towns and county boroughs, (2) small towns, and (3) country districts.

In all cases it is advisable to allow the school medical service to grow up slowly and unobtrusively in accordance with local experience. But the following general

[1] *Vide* Appendix II, A, B, C.

principles will be for the most part applicable. The first essential in any preliminary scheme of organization (and an essential common to all localities) is that every Education Committee should secure the services of a competent medical adviser whose first duty should be to acquire expert knowledge of all matters relating to school hygiene. He will, so to speak, be the foundation upon which all local efforts must be based. He must therefore be free to attend the meetings of the Committee and of the various Sub-Committees, so that he may acquaint members with the medical aspect of all educational problems.

The School Board or Commission in every small district in Switzerland has either a private doctor or the school medical officer as one of the members of the Board. In Sweden, as far as school hygiene is concerned, the school medical officer is not merely an advisory member of the staff: he is also empowered to assist in framing decisions. In England the system of local government is different. But the advice and services of a medical man would obviously be invaluable in committee for the clearer appreciation of many scientific and educational problems. At present the members of Education Committees necessarily have but slight acquaintance with the problems of school hygiene. One of the main duties of the medical officer would be to explain to the Local Education Committee what is expected of them in the discharge of their duties to the children and to the nation in order to fulfil the spirit rather than the letter of the law. Such

a specially appointed officer should therefore be free to devote a considerable part of his time to the study of school hygiene, and should be paid an adequate salary.

The next step must be for each local authority to make some attempt to carry out the statutory obligations of health inspection ; for it would be impossible, except in the smallest towns, for the responsible medical officer of the Education Committee to undertake all the routine inspection required by the Board of Education.

All organization, then, should first aim at securing these two preliminary steps, and under the guidance and direction of an experienced medical officer a system will gradually grow up to suit local conditions and requirements. There is no need for excessive haste. It matters not if only a few children are examined during the first few years so long as the foundation for future developments is securely laid.

Large Towns

Let us begin with the consideration of large towns and county boroughs where the immediate needs are greatest owing to the aggravation of the evil results of ignorance and neglect.

In addition to making provision for the statutory examination of all children in accordance with the requirements of the Board of Education, the specially appointed officer of the Education Committee, whether he be called Medical Superintendent

of Schools, Director of School Hygiene, or School Medical Officer, would from the first have the following duties :—

1. To carry out the provisions of the Education (Defective and Epileptic Children) Act, 1899.
2. To supervise the arrangements for the special instruction of those children who require special educational treatment.
3. To approve sites and plans for new buildings and to suggest alterations in old, in co-operation with the architect and sanitary engineer.
4. To supervise school furniture, equipment, and methods.
5. To co-operate with the local medical officer of health in case of infectious disease in the schools.
6. To advise as to methods of physical and manual training.
7. To examine scholarship candidates, teachers, and other employees of the Education Committee.
8. To supervise nurses, and their routine in the schools.

For the efficient discharge of these duties in large towns the Education Committee would require the whole-time services of a medical man. So that it would be unwise to attempt to make use of the already overburdened medical officer of health, even for administrative purposes, for his interests are concerned rather with the health of the children than with their education. Any danger of friction or of overlapping of

function has been proved to be more imaginary than real: and the work is too important to be assigned to an assistant of the medical officer of health, as some local authorities have done. In course of time, as the work develops, the school medical officer would require two or three assistants on his permanent staff to undertake certain duties, and a number of nurses for routine inspection.

As far as statutory inspection is concerned, it would be advisable to divide each town into school districts as in Paris, and to allot a small group of schools to a local practitioner, or consultant, devoting part time to the work. The ideal should be to give not more than 2,000 or 3,000 children to each doctor, say in five or six schools. This would represent an annual number of 200 or 300 new children for admission. The school doctors would devote one, two, or three school sessions a week to the duties, according to the pressure of the work. They would be responsible for the supervision of the school nurse, for the keeping of health registers and schedules, and for the sanitation and general well-being of the school, and would co-operate with the medical officer of health in case of school outbreaks of infectious disease, and refer cases of intractable verminous conditions to him for further investigation and disinfection at the home. They could also conveniently examine all absentees alleged to be suffering from various diseases.

The advantage of this system is that it tends to make each school dependent upon a local medical

man for routine inspection. It is the plan that has been adopted in German towns for general school hygiene, and in American cities for the prevention of infectious and contagious diseases. It is an improvement upon the itinerant inspectorial system, by which an unknown medical man pays occasional visits to the school, possibly to the discomfiture of the children or to the dislocation of school routine. Moreover, a local doctor has a great opportunity of getting into touch with teachers and parents. It should be part of his duty to give lectures to the teachers, and arrange conferences at the school for the parents. By means of these conferences and by the exercise of tact he should be able to overcome any danger of losing his own patients in the person of aggrieved parents—a danger which might occasionally arise in the case of the parents of verminous or neglected children.

The appointment of local school doctors for the routine work of medical inspection should only be temporary, say for two or three years, and the duties would occupy only a small portion of each doctor's time. The question of professional jealousy need scarcely be considered in practice, as the majority of local doctors would hold appointments in course of time. Moreover, as their duties are confined to inspection, without any extension to treatment, there would be no opportunity for appropriating patients. All children would be examined in the presence of teachers, and it is difficult to imagine that any school doctor would be likely to attempt to improve

his position as a private practitioner. Another distinct advantage is that this system affords an opportunity of educating the medical profession itself in a new and important branch of preventive medicine. To quote Dr. Lovett, of Boston, 'The chief obstacle to progress is to be found in the general apathy of the average medical practitioner, whose knowledge should be brought up to date in the matter of school hygiene, with special reference to defects of eyes and ears.' To overcome this limited clinical experience on the part of general practitioners in poor districts, and their apathy as to the possibilities of preventive medicine, it should be possible to make the appointment of a local school doctor conditional upon his attendance at one of the recognized post-graduate courses of instruction.

The preliminary methods adopted in some of the large towns may now be described in detail. In **Boston**, Massachusetts, a town with a population of 600,000, there are a director of school hygiene and three assistants, a medical inspector of special classes, a supervising nurse and assistants, and an instructor of military drill. Provision is also made in the same department, and under the director of school hygiene, for special instructors in physical training and assistants, instructors and supervisors of playgrounds and athletics, and assistants in the sand gardens for infants. The director has general supervision and control of all matters affecting the physical welfare of pupils and teachers, as

indicated by the multifarious duties of his assistant staff, and in cases of infectious and contagious disease, he co-operates with the Board of Health. In his report for 1907, Dr. Harrington, the director, says, after sixteen years' experience : ' It does not seem possible to conceive a more satisfactory arrangement, or a more effective piece of school machinery, than nurses under school supervision. With a corps of medical inspectors under this same supervision, who would conduct a daily clinic[1] in their respective districts, there are no problems connected with the health and efficiency of school children which would not be quickly, rationally, economically and effectually solved. Until such an organization is perfected, in part or in whole, little progress can result from the efforts to promote the health and efficiency of our school children.'

Paris, with nearly 3,000,000 inhabitants, is divided into twenty districts. In each of these a number of local school doctors are appointed for three years. Thus in the twentieth district there are ten school doctors, each having charge of four or five schools with 2,000 to 3,000 school children. Provision, so far, has only been made for systematic health inspection, by means of fortnightly visits by the doctor to each school in his group. There is no supervisory medical officer, or director of school hygiene. As far as medical etiquette is concerned no difficulty has arisen between school doctors and private practitioners. Some of the

[1] Weekly or fortnightly visits have been recommended as sufficient throughout this volume.

school doctors have devoted considerable time to the study and investigation of various problems in the field of school hygiene.

Berlin, with a population of 2,000,000, began cautiously with the appointment of ten school doctors; two schools were allotted to each. The number of doctors was increased three years later to thirty-six, each having charge of seven, eight, or nine schools. Now there are forty-two doctors, each having roughly 5,000 school children under his care.

Wiesbaden, with a population of 100,000, was the first town to arrange for the systematic examination and re-examination of children by school doctors, to take practical interest in educational hygiene and to adopt a system of allotting health certificates to all children. The re-examination takes place in the third, fifth, and eighth school years. This scheme, which was recommended by the Prussian Ministry as a model for other towns, depends for its efficiency upon the fact that a large number of local school doctors are appointed to take charge of only a few schools. On an average twenty-five classes, representing a total of about 1,250 children, are allotted to each doctor. All problems of school hygiene are dealt with by the school doctors, but there do not appear to be any adequate arrangements for uniformity in routine or for supervision and control by a chief medical officer.

London. The first steps in the scheme of organization, still in process of development, in London have been already dealt with from the historical point of

view.[1] At the present time there is a permanent staff of eleven assistants under the direction of the Medical Officer (Education). Some of these assistants are responsible for certain branches of the work at the head office, such as uniformity in the control of infectious disease in school. Others are engaged in the special schools for physically and mentally defective children, in secondary schools, or in the laboratory. For the purpose of routine medical inspection, the London educational area has been divided into sixteen school districts, in charge of which there are sixteen 'school doctors'. Each school doctor already has the services of one or two 'assistant school doctors', and the schools in each district are evenly apportioned. There is also a staff of fifty-one school nurses under a superintendent and two assistant superintendents.

Eventually, when the complete scheme is in working order, there will be, for the purposes of local medical supervision, sixteen school doctors, fifty-six assistant school doctors giving part of their time, and fifty-one nurses giving the whole of their time to the work. Each doctor will have charge of approximately 8,000 or 9,000 children in ten or twelve schools, and each nurse of 13,000 children in twenty schools. Special work, requiring uniformity and exact knowledge of administrative routine is, for the most part, carried out by the permanent staff. But all school doctors, in addition to their routine duties, are expected to devote part of their time to original research in connexion with the

[1] See chap. ii, p. 32.

material problems of school hygiene. Many also have the opportunity of lecturing to teachers upon the theory and practice of school hygiene. Vacancies in the permanent staff will be filled by 'school doctors', and the school doctors themselves will be appointed by selection from assistants when they have gained two or three years' experience. The full staff of the medical department of the London Education Committee will eventually consist of fifty-one school nurses, a superintendent, and two assistant superintendents of nurses, seventy-two local school doctors, devoting three school sessions a week to their duties and holding office for only three years (twenty-four retiring each year), a staff of twelve or more permanent officers, all working together under the guidance and direction of the Medical Officer (Education).

As far as organization in England is concerned, and if provision is to be made for the broad requirements of school hygiene in accordance with the suggestions of Circular 596,[1] the only practicable scheme in a town of, say, 300,000 population, with 50,000 school children, is to appoint a medical superintendent of schools as a whole-time officer of the Education Committee. Under his direction there should be a permanent staff, consisting of at least one whole-time assistant and two half-time assistants, to whom the superintendent would delegate certain duties (such as the supervision of schools for defective and cripple children, or of methods of physical training, or other work), and a service of

[1] Appendix II, C.

ten or fifteen part-time school doctors, each having charge of the routine work in a particular school district. There should also be a nurse attached to each group of schools to work in association with the local school doctor.

A similar scheme of organization is desirable in all towns and county boroughs, with a population much above 100,000 or with more than 20,000 school children. That is to say, there should be one medical superintendent of schools, four or five local school doctors, and three or four school nurses, who might perhaps also fulfill the duties of health visitors. In addition there would be the medical officer of health. It is important that the office of medical superintendent of schools should be distinct from that of the medical officer of health, as in towns of this size there is always ample work in the field of public health for the services of a whole-time medical officer who would be able to co-operate with the school medical officer as far as infectious diseases and sanitation are concerned.

The Education Committee in such a town is of sufficient importance to require the services of a special medical officer, devoting his whole time to school problems, and should not be satisfied with the second call upon the time of another officer. Moreover, in most cases, a fundamentally wrong principle is enforced if one officer attends the meetings of the Education Committee, while the actual educational work is carried out by a subordinate, who may possibly be some underpaid assistant.

Small Towns

In the smaller towns there is no need for special differentiation. Everything is more compact, there is less ground to be covered, and there is generally a more intimate association between the Education and the Sanitary Committees. Moreover, as there is not always sufficient work to occupy the whole time of a medical officer of health, both Committees can employ the services of the same officer, who, by delegating certain duties to an assistant, or to one or two local doctors (required to help in routine health inspection), will be able to maintain control over all branches of the work. Undoubtedly it is difficult for any man to make himself expert in all branches of sanitation and public health as well as of education, in the same way that it is difficult for any man to be proficient in the practice of both medicine and surgery. But the doctor appointed should be able to get thoroughly in touch with all classes of his small community, and should become a 'pervading influence making in the long run for better hygienic conditions in the school and the home'. Such an official would be a truly invaluable asset in a small town.

Rural Districts

The organization for county areas and rural districts is more difficult. At the head of the system of Local Government is the County Council, directly responsible among other things for the administration of the laws

as to lunacy, rivers pollution, and the regulation of midwives, but having only advisory and supervisory duties as to public health, sanitation, and the Poor Law medical service. Responsibility in these matters is delegated to Urban and Rural District Councils. Educational administration, however, is centralized in the Education Committee of the County Council, except in the case of the larger urban districts, where there may be a separate Education Committee.

Medical inspection of schools and general school hygiene must be considered in their relation to a school population of, say, 20,000 to 50,000 school children in attendance at 200 to 500 schools, scattered over an area of from 400,000 to 900,000 acres, according to the size of any particular county. There are two great difficulties: one is the absence of travelling facilities from school to school; the second is the small size of the schools, only a few children needing examination on any particular day. The only immediate obligation is for the Education Committee to organize some scheme whereby the children can be medically examined on admission to school and at subsequent periods. Such a scheme presents no difficulties in itself, but there is need to consider the future developments of school hygiene and the possibility of combining these with the existing public health administration in country districts. Four different schemes deserve consideration, and experience alone can decide which should be adopted in practice.

1. Some County Councils propose to leave the matter

in the hands of their Education Committees, instructing them to prepare a scheme for the medical examination of the children on admission to school and on subsequent occasions, as the Board of Education has directed. The Education Committee can then make arrangements for a local doctor to be attached to the staff of each school and to attend at the beginning of each school term to carry out the necessary examination. His reports would be sent direct to the Education Committee. In some such way as this the work was begun in Sweden and Switzerland, and it is a method which has many advantages. Very few rural districts or county areas are prepared to meet the expense of introducing a complete scheme of organization. Hence it is advisable to begin slowly and quietly, to carry out statutory obligations and to proceed tentatively with further organization. None of the local doctors so appointed for a special purpose would be permanent officials. They would be paid for examining school children and for filling up schedules, with which their duties would cease. Experience, however, tends to show that many doctors would welcome the opportunity of interesting themselves in education and in school hygiene, and would very shortly become useful in helping to perfect a scheme of organization, when the County Council considered it necessary to take further action.

The sanitary inspection of schools and the prevention of infectious disease now fall within the duties of medical officers of health, and there is no reason why the present arrangement should not continue or be

extended. Indeed there would be distinct advantage if the Education Committee were to appoint the local medical officers of health to carry out the routine examination of the children, but such a course need not be essential. In either case the appointment for routine inspection would not be permanent.

The next step towards progress would be for the Education Committee to appoint a medical officer at head quarters—either part-time or whole-time—to advise them as to future developments and to deal with other problems of school hygiene, but not to carry out routine inspection.

The great advantage of this first plan lies in the fact that it necessitates very gradual development as the result of local experience and requirements. Furthermore, no difficulties as regards travelling from place to place have to be considered.

2. The second scheme is for the Education Committee to appoint, according to the size of the county, one, two, three, or more whole-time officers to travel round the country and to examine the children in accordance with statutory obligations. Such officers are expected at the same time to pay attention to other problems of school hygiene. But this work of routine inspection is monotonous to a degree and could not be endured if unrelieved by other work. Besides, a great amount of time and energy must necessarily be expended in travelling. In this case also the prevention of infectious diseases, and perhaps sanitation also, are left to the local medical officers of health. But pro-

vision is made by the Education Committee for uniformity and systematic recording of health conditions at head quarters, while one of the officers is appointed as superintendent, and attends all the meetings of the Education Committee for advisory purposes. He also can undertake the examination of scholarship candidates and teachers, as well as of defective children who require special educational methods.

In the remaining two schemes the conditions are different, for the County Councils, who are ultimately responsible, take into consideration the whole question of medical service.

3. The County Council appoint a full-time county medical officer, who is made responsible for the supervision of all problems of public health and for the administration of school hygiene. He attends all Committee meetings and is himself able to undertake many branches of the school work, such as supervision of the mentally and physically defective and their separation into residential schools and the introduction of methods of physical and manual training. He would also be able to supervise and introduce uniform methods for dealing with outbreaks of infectious disease in the schools. He also supervises the administration of the Midwives Act and the work of the local medical officers of health and sanitary inspectors of the various districts. The actual work of school inspection may either be allotted to the local medical officers of health, or full-time assistant travelling inspectors may be appointed.

4. The fourth scheme is merely the outcome and extension of Scheme 3. But it is based upon a complete and efficient system, in which all the medical services of the county are centred in one administrative medical officer, under whom there are a number of full-time deputies in charge of certain areas, working independently of local influence, but in harmonious co-operation as part of one organization.

To begin with sanitation: there are a number of sanitary inspectors appointed and paid by the various Urban and Rural District Councils. These have definite duties to perform, and are indirectly under the supervision of the Local Government Board. A great deal of useful work falls within the sphere of their activities, but they require more immediate supervision than is possible at the present time. If a number of these urban and rural districts are grouped into a smaller number of sanitary areas, say four or six for each county, it should be possible to appoint a deputy county medical officer to take charge of the public medical interests and problems of the area. He would be a whole-time official and would be free from the demands of private practice. There would be a great variety of work—sanitation, public health, Poor Law, vaccination, and school inspection. In the smaller areas also he would be made responsible for the charge of the isolation hospital and Poor Law infirmaries, or in the larger districts a junior medical man might be appointed for these purposes. He would be able to get about his district conveniently. These

deputies would naturally be under the supervision of the chief medical officer.

At the same time all other branches of State Medicine could gradually be brought under the jurisdiction of the deputy medical officers, such as the duties of certifying factory surgeons, district nursing associations, and the supervision of midwives. Such a scheme is eminently desirable in the interests of harmony, economy, and efficiency, but it is doubtful whether the time is ripe for such a complete unification of the public medical services in a county area. The County Councils have no power to compel District Councils to acquiesce in such a scheme, though it would relieve the District Councils of a considerable amount of responsibility and expense.[1] They would still continue to appoint a sanitary inspector and a surveyor.

If such a scheme were adopted there would be, for administrative purposes, under the supervision of the principal medical officer of a county area, the following institutions :—

(1) an asylum for mental diseases,[2]

(2) a residential school for mentally defective, crippled, and epileptic children,

(3) a laboratory for chemical and bacteriological investigations,

[1] For any such scheme fresh legislation under the Local Government Acts would be necessary.

[2] It is not suggested that the medical superintendent of an asylum for mental diseases should work under the direction of a county medical officer—for that would be impracticable. But in the interests of harmony and efficiency, there should be, for administrative purposes, definite co-operation between the two officers.

and, in each sanitary area, under the immediate supervision of the deputy medical officers,

(4) one or more Poor Law infirmaries,

(5) one or more isolation hospitals for infectious diseases,

(6) a district nursing association for midwifery as well as for general duties and for school work,

(7) a sanitary inspector for each sub-district.

With regard to the more detailed organization of school hygiene in county areas, it is useless at present to deal with the matter more fully, or to give examples of what has so far been done in England, as the whole subject of school hygiene has been treated in a somewhat haphazard manner. Various schemes have been prepared, but, for the most part, without due appreciation of all the factors of the problem.

Experience alone will show which of these four schemes suggested in this chapter should be adopted in any particular county area. In the meantime the general advantages and disadvantages of each scheme may be indicated.

Summary. The main point of the first scheme, a scheme by which local practitioners are placed temporarily in charge of several schools in their respective districts, is that it is tentative, that it fulfils statutory obligations without any great expense, that it is efficient and that it serves the great purpose of educating medical men and teachers in each locality as to the needs and requirements of school hygiene, gradually leading to the institution of an adequate system of

lectures for teachers and to closer association with the work of the district nurse. At the same time, under this scheme, an Education Committee is enabled to hold its hand so as to give the whole matter due consideration. No difficulties as to travelling from place to place or any great waste of time is likely to be experienced. The scheme has few disadvantages except that it means tardy progress, and that no provision is made for a central authority to co-ordinate results or to insist upon uniformity in administrative routine. Questions of jealousy and friction between local medical practitioners need not be seriously considered, while the difficulties that are likely to arise between aggrieved parents and a conscientious school doctor are more imaginary than real.

The second scheme, whereby travelling inspectors are appointed, is useful for securing the control of officers and uniformity in administration; but the personal contact between teacher, parent, and doctor is lost. Moreover, there can be no adequate arrangement for systematic lectures to teachers or for the education of local medical men in the problems of school hygiene. There are also great difficulties in travelling over large and sparsely populated areas.

The third scheme, in which the work is entrusted to district medical officers of health under the supervision of a county medical officer, is sound and practicable, and has been initiated in Surrey, Hertfordshire, and other counties. The chief objection is that some of the local medical officers of health have not sufficient

spare time to devote to the additional work. But in such cases other local practitioners might be appointed for the routine work, while the district medical officers of health would be charged, as at present, with all matters relating to infectious disease and sanitation in school.

The fourth scheme—a scheme for unifying the medical services of a county under one principal medical officer—offers the widest outlook, though at present few areas are prepared for the introduction of such a sweeping reform in methods of administration. Some counties, however, may lay their plans with the broad view in mind, of forming combined sanitary districts and placing them under the charge of deputy medical officers. The advantages are obvious. There would be a uniform scheme of organization and all branches of State Medicine would be under the charge of full-time officers with security of tenure ; while there would be no disarrangement of routine work owing to the exigencies of practice or of local influences.

Finance

The financial considerations of medical inspection are intimately bound up with those of local organization, for the greater part of the expenditure devolves upon local authorities. To secure efficient work, it is essential that some part of the expense should be borne by the National Exchequer. The State's responsibility and the national importance of the work

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have already been emphasized in a previous chapter; and the report of the Interdepartmental Committee on Physical Deterioration also urges this point of view in the following terms :—'The Committee are emphatic in recommending that a systematized medical inspection of children at school should be imposed as a public duty on every school authority, and they agree with the Royal Commission on Physical Training (Scotland) that a contribution towards the cost should be made out of the Parliamentary Vote.'

The cost of medical inspection by itself is infinitesimal as it means little more than the school doctors' salaries. As to this point, the report of the Interdepartmental Committee on Medical Inspection, 1905, says :—

'Finally we desire to point out how small is the expenditure which inspection involves; in no urban area does it require more than $\frac{1}{10}d.$ rate, generally not so much.'[1]

Expenditure, however, will increase if the doctor's recommendations for improvements and amelioration are carried out and if any form of medical treatment is undertaken. Such expenditure represents merely the cancelling of a national debt bequeathed from a previous generation. And it should be possible by means of carefully considered adjustment of local and national charges to overcome the usual objection to expenditure—'the phantom of the ratepayer.'

[1] It must be remarked, however, that much of the work to which the report refers was undertaken by medical officers of health who were either not paid at all for their services, or else received only small honorariums.

With regard to the details of finance, at one time rough estimates of the total cost of medical inspection to the nation were made on some such basis as a minimum of sixpence, and a maximum of one shilling, per child per year. That represents approximately, for six million children, an annual expenditure of £150,000 to £300,000. It was further suggested that towards this sum one half—that is £75,000 to £150,000 —should be contributed from the National Exchequer as a Parliamentary grant. These estimates, which were of the vaguest kind, were offered only with a view to giving legislators and administrators some idea of the comparative smallness of the cost involved in establishing the necessary machinery for medical inspection.

The next step was to count the actual cost of providing for each child to be inspected each year in accordance with the terms of the Act and the recommendations of the Board of Education. That is to say, each Education Committee calculated, for its own area and for the first year, the number of children to be admitted and the number leaving. It was then assumed that a medical man should be paid one shilling or half a crown for each child examined. Education Committees thus drew up very rough estimates, added certain grants for travelling, printing of forms, office expenses, &c., and compared these estimates with the salaries of one, two or more whole-time officials.

As a result, no definite financial standard was ever established. Adequate remuneration has been offered

only by one or two of the large towns and boroughs, and by a few counties which have appointed whole-time medical officers, partly as health officers and partly to supervise the school work. For the most part, however, grossly inadequate salaries have been offered by local authorities, with the result that the most suitable men have not submitted applications, and in many parts the posts have been filled by medical men scarcely fitted for the work. Some medical journals have even refused to accept advertisements from local authorities not offering adequate salaries.

It was not until the British Medical Association took up the question of finance that any definite standard was set. Many suggestions were considered, but finally it was resolved to recommend the standard adopted by the London Education Committee. That is to say, every school doctor should be paid not according to the number of children examined—which is not a fair criterion, for one child requires half an hour and the next child two minutes or less—but according to the time spent in school work. This time should include not only the routine examination of children, but also the advising of teachers, the supervision of the work of the school nurse and other duties that fall to the lot of the school doctor. The salary suggested was £50 per annum for one session per week. Thus a school doctor devoting three school sessions a week to the work in accordance with the practice recommended in previous chapters would receive a yearly salary of £150. In the case of school doctors newly appointed,

without any previous experience of the work, it would be sufficient that they should be paid a commencing salary at the rate of £40 a year for one school session per week, that is £120 a year for three school sessions a week. In either case, the salaries of medical women should not be less than those of medical men.

An experienced whole-time school medical officer should, under no circumstances, receive less than £500 a year. There would be no objection, however, to junior men being appointed as assistants early in their professional career at a salary of £250 or £300 per annum.

Financial considerations as to medical treatment at school and as to the establishment of school clinics are deferred to a subsequent chapter.

CHAPTER X

THE SCHOOL DOCTOR: HIS DUTIES AND QUALIFICATIONS

School Doctors of Two Kinds: (1) 'School Doctors' Proper, i. e. Practitioners of Medicine, (2) 'School Medical Officers', i.e. Directors and Administrators.—Duties of a 'School Doctor': (*a*) Official; (*b*) Fundamental.—Duties Specified.—Interest in Social Problems Essential.—Personal Qualifications.—A Special Mental Attitude.—Obstacles and Hindrances.—Professional Qualifications.—An Additional and Special Training.—Clinical Experience.—Diploma in School Hygiene.—Experience in Social Work.—Pioneer Investigation, Social, Educational, and Medical.—Summary of Qualifications and Duties.—Medicine, Psychology, and Pedagogy.—The Chief School Medical Officer.—Capacity for Organization and Administration.

'THE function of the school doctor in relation to children in the schools is often mistaken even by medical men. It is no part of his duty to prescribe for, or to treat, any individual case. His work is preventative, and in individual cases only applies to matters involving educational questions. He can call attention to the need of glasses, but he has nothing to do with prescribing them. He may notice the presence of adenoids, but takes no part in their removal. On the other hand, his work should extend far beyond mere investigation of the sanitary state of buildings or the exclusion of unhealthy or diseased children. The methods of education, the requirements of physical exercise, the avoidance—particularly in the very

young—of overstrain from prolonged fatigue or from improper tasks, are all matters in which improvement can only be attained by the efforts of the school doctor. Above all, he must act, not as an authority to shut or close, to disturb or interrupt the proper work of the school, but as a counsellor and adviser with a knowledge of school routine and of the requirements of health, to assist and collaborate with the teacher and administrator, and it is with this purpose in mind that he should enter any school.' These words are almost as true to-day as when Dr. Kerr discovered their truth in Bradford fifteen years ago.

School doctors are of two kinds. First there are practitioners of medicine who become attached to the staff of one or two local schools, and who carry out the routine work of inspection and classification, giving only a few hours each week to the work; and secondly there are those who, devoting the whole, or the greater part, of their time to the work, become specialists in one or more branches of it, and act as directors and administrators of school hygiene. The first class will always be many—one doctor to every small group of schools. The second class are few, and are developed from the first by a process of natural selection.

Duties

The school doctor was first recognized officially at the Board of Education in the Code of 1908. He is defined as ' a medical officer named by the local educa-

tion authority and recognised as such by the Board'. Previously the medical officer of health, having certain statutory functions with regard to the prevention of infectious diseases in school, was vaguely referred to as a 'medical authority'; and there was also provision for the appointment of medical men to carry out certain powers and duties under the Elementary Education (Blind and Deaf) Act, 1893, and the Elementary Education (Defective and Epileptic) Act, 1899.

The Code of 1908, however, assigns to the school medical officer the specific functions:

1. Of reporting on the working and effect of any arrangements made for educating children at open-air schools, school camps, or other places selected with a view to the improvement of the health and physical condition of the children.

2. Of advising or approving the closure of a school in the case of outbreak of epidemic disease.

3. Of authorizing the exclusion of certain children from a school on specified grounds for preventing the spread of disease, on account of their uncleanly and verminous condition, or because owing to their state of health or their physical and mental defects, they are incapable of receiving proper benefit from the instruction in the school.

The first official pronouncement on the organization and future development of a special School Medical Service is contained in Circular 596, which indicates the advisability of centralizing these functions and responsibilities in the department of the chief school

medical officer of each education authority. For the Board of Education has in view 'the desirability of assisting local education authorities to concentrate and organize, in the department of the school medical officer and matters of school hygiene, including medical inspection under the Act of 1907, and they assume that the school medical officer will, in addition to performing the specific functions assigned to him by the Code, also be made responsible by the local education authority for supervising and controlling the general work of medical inspection'.

In official regulations and suggestions, however, there is an occasional tendency to confuse statutory and incidental obligations with fundamental general principles. It may be as well to treat the subject in natural sequence, according to its spontaneous growth, and to deal with the duties of the school doctor first, and defer to the end of the chapter any reference to the functions of the chief school medical officer.

The personal and professional qualifications of a school doctor attached to the staff of every group of schools will be considered later. His duties, which depend for their efficient discharge very largely upon his co-operation with the teaching staff and school managers, may be summarized thus:—

1. To examine cursorily every child about the time of its admission to an infant school, as to cleanliness, and as to its obvious physical defects. This first examination should be conducted in the presence of parents or guardians.

2. To examine in detail every child about the time of its transference to the upper school—that is about seven years of age—and to decide what special educational training (if any) is suitable to the child.

3. To visit and inspect all classes once or twice a year both as regards the general health and physique of the children and also as regards the conditions under which they are working, namely the ventilation, lighting, &c., on the one hand and the amount and kind of work, overpressure, fatigue, physical exercises, manual training, &c., on the other hand.

4. To make special visits to the boys' and girls' departments once a year for the purpose of examining all children suffering from defective vision and to report upon eye disease generally. The teachers should test the vision of all children once a year, but the doctor's examination can scarcely be undertaken at the time of his visits for other work, except in very small schools.

5. To supervise the work of nurses with regard to ringworm, vermin, and skin affections, and to visit each school once a week or once a fortnight for the general examination of special children selected by the teacher or nurse.

6. To advise the Health Committee of each school upon various points of hygiene bearing upon educational matters, and to give definite instructions about the care of the delicate and defective children.

7. To give lectures to teachers and others upon school hygiene and elementary physiology.

8. To deal with the question of medical certificates of absence given by other practitioners. This duty might be combined with the weekly visit to the schools.

9. To investigate (if necessary in conjunction with the medical officer of health) all epidemics and outbreaks of infectious disease in the schools and also to take measures to prevent not only the spread of the disease but also the unnecessary closure of the school.

10. To carry out original investigations and to do research work, especially in the larger towns.

With regard to these duties the Board of Education has issued the following regulations: '(*a*) The inspection should be conducted in school hours and on school premises, and in such a way as to interfere as little as may be with school work. The examination of each child need not, as a rule, occupy more than a few minutes. (*b*) The convenience of the teaching staff and the circumstances of each school must receive consideration, and in these matters and in the actual examination, the medical officer will no doubt exercise sympathy and tact, giving due thought to the personal susceptibilities of those concerned. (*c*) The facts revealed by inspection must be entered in a register kept at the school, the confidential nature of many of the entries being carefully respected. A copy of the entries should be transmitted with the child to any other school to which he or she may go.'

The general principles of these duties and the necessity for the co-operation of the teachers have already

been considered in a previous chapter. At present the minimum amount of inspection that is required by the Board of Education under the Act consists in three examinations of each individual child—the first at the time of, or as soon as possible after, admission to school; the second at about the seventh year of age ; and the third at about the tenth year of age. A further inspection immediately before departure of the child into working life is recommended as desirable. But it is distinctly laid down in an official memorandum that these directions and requirements as to the degree and frequency of inspection ' are not intended to exclude other medical work which the Board trust will be undertaken by local education authorities according to their abilities and opportunities '.

To summarize the position :—As far as the routine duties of a school doctor are concerned, efficiency demands that—

1. Each school in his area should be visited as a matter of routine once a week or once a fortnight for general purposes.

2. Each department (boys and girls) should be visited once a year for vision testing of selected children ; and each department (including infant schools) once a year for dental examination.[1]

3. Each class should be visited once or twice a year for general inspection and for the supervision of special children.

[1] Dental examination by itself is a large and important subject. Perhaps it might be combined with the ordinary class-room examination. In populous districts special dental surgeons are required.

4. And, lastly, each child should be inspected three or four times, at stated intervals, during its school career.

Further, the school doctor must supervise the work of the school nurse, investigate outbreaks of epidemic disease, and give lectures to teachers.

In addition to these definite and practical duties, a school doctor should undertake a personal investigation of the social conditions and local influences affecting the mental and physical development of the children under his supervision. He should also lose no opportunity for the diffusion of knowledge among the lay public in general and among educationalists in particular as to the meaning of school hygiene.

To this end he should arrange to be present at conferences of teachers and parents at the school. For instance, once or twice a term, about one hour before the afternoon school session closes, the department should be thrown open to parents. They should come and see their children at play and at work, doing physical exercises and manual work, or singing, drawing, reciting, and dancing. The school doctor on such occasions, either by personal conversation with the individual parents, or by a series of short discourses on health, should explain the desirability for the help and co-operation of the parents in the education of their children. This scheme has been practically carried out in certain schools, and might with advantage be extended throughout the country. No financial outlay is involved, and it is likely to ensure more definite

results than house to house visitation by a lady health visitor.

For the same purpose also, namely, that of educating others, the school doctor should attend the meetings of the Health or Care Committee of each school, so as to direct the zeal of lay workers in the right channels. Such a Health Committee for each school should meet once or twice a term after the visits of the school doctor, and its chief functions should be to discover how the doctor's advice as to the treatment of defective children may best be followed.

So far, only the diagnosis, or rather the detection of disease, has been considered. Nothing has been said as to the question of treatment. The school doctor indicates to the parents, generally through the medium of the teacher, what line of treatment is necessary, and all further responsibility is left in the hands of the parents—which means very often, especially in the poorer districts, that nothing is done. It is for this purpose that Health Committees are recommended for certain schools, and in others the co-operation of Guilds of Help and other voluntary agencies is necessary. This aspect of the problem—the medical treatment of school children—must be deferred to a later chapter.

Qualifications

As every doctor is not fitted to become a surgeon, so every medical man is scarcely fitted to become a school doctor. So far no special code of qualifications

has been drawn up. But these new duties are not to be undertaken lightly, without care or forethought. The work is only in its infancy. All school doctors must therefore educate themselves, and there is great scope for originality, and for the adoption of individual methods in contrast to the official attitude and traditional acquiescence in routine which is so often to be found in other branches of the public service.

In the practice of medicine, a physician comes into contact with his patients and with one or two members of the patient's family, and occasionally with the medical officer of health, the coroner and other officials. But there, as a private physician, his responsibility ends.[1] For the most part, his routine duties are confined to the consideration of his patients and of himself. In the school his sphere is at once extended. His daily work brings him into contact not only with children and parents, but also with many officials—teachers, school managers, nurses, school inspectors, medical officers of health, and a committee of expert educationalists. There are two courses open to him. He may take refuge in the dignity of his legal standing and enforce the requirements of hygiene as an official, thereby nullifying the most essential potentialities of his work. Or he may pursue a course of harmonious co-operation with the school authorities, almost forgetting that he himself has an official rôle. Teachers

[1] In this respect all reference to the public appointments held by many practitioners is omitted.

and parents want his help and advice, and will be ready to follow it, if given in the right spirit. To this end there is need for a consideration of the school doctor's qualifications and methods.

Before undertaking the new work, the school doctor should be possessed of many qualifications—both personal and professional. He should be a man of wide experience, of large sympathies, of many interests, and endowed with abundant insight into human nature. Such personal qualities are likely to prove of greater value than the highest professional attainments.

The school doctor should have a special temperament and should possess some of the characteristics, more commonly found in women than in men, such as the power of attraction, sympathy and a natural love for children. He requires also to develop in himself a special mental attitude. His manner should be open and his speech direct. His task is not easy, and children themselves—always difficult enough to manage—are especially shy of strange doctors, but experience will teach him how impediments may be overcome by a little patience and circumvention. The difficulty is generally increased when the children are seen in the presence of their parents, who often show a certain objection to official interference with their natural responsibilities, and sometimes put foolish obstacles in the way of the doctor. In these cases the doctor's word is not accepted as law; there is no firm bed-rock of faith, as is the case in private practice.

The teachers also are not always easy to approach;

they have a dread of the inspectorial system, and if they think the doctor enters their school to find fault and to criticize, all kinds of complications may arise. The nurse too is no longer in the private employ of the doctor. She is an official with her duties and responsibilities, not only to the doctor but also to the State. She must be regarded rather as a coadjutor than as a subordinate. The susceptibilities of school managers and of any philanthropists interested in school work must be considered. The school doctor is responsible to his Education Committee and to the State for the efficiency of his official routine. Finally, he will occasionally find himself in conflict with the interests of other medical men, especially as regards the matter of certificates of absence from school.

Thus, owing to the numerous obstacles and impediments which beset the school doctor's work considerable discretion must be exercised in the choice of suitable men.

The school doctor's professional qualifications are also of importance. Generally speaking, he should begin to fill his first school appointment between the ages of 30 and 35, but, for routine work, older men may very reasonably be chosen if they have been engaged in the practice of medicine. Over and above the ordinary training of a medical student, a would-be school doctor should hold an appointment for six months or a year as house physician, or house surgeon, in a general hospital. He should also devote some time after qualification to making himself specially

acquainted with the practical methods and routine of the special departments concerned with diseases of the eye, ear, nose, throat, and skin, and also with a special study of orthopædics and of electrical treatment for infantile paralysis. Then he should spend at least six months in the wards and out-patient department of a children's hospital, where he would study the normal and pathological growth and development of the child, and another six months either in a fever hospital, or in an asylum for mental diseases.[1]

That is to say, for two to three years after obtaining a qualification to practise medicine, the would-be school doctor devotes his time to attaining some degree of proficiency in all the branches of his profession. At the same time he gains a broad outlook on the field of medicine, and needs only a few years' experience as practitioner, or as assistant, to increase his knowledge of the world and of human nature. Two or three years of work in private practice should suffice to enlarge his outlook on life, and enable him to undertake the duties of a school doctor with knowledge and understanding. In return for such an additional and special training a medical practitioner may reasonably look for an appointment as local school doctor in charge of a small group of schools in his neighbourhood. The school work would always be full of interest, and would, to a large extent, relieve the monotony of private practice.

[1] Both these appointments are important. A study of psychological medicine should be regarded as essential.

If a man has obtained this kind of practical training in his profession, it matters not what are his actual degrees or diplomas. It is clinical experience which is most likely to develop qualities suitable to a school doctor.

In addition to all this if the doctor has a natural bent towards administrative work or capacity for organization, he should certainly spend six months or a year in securing the Diploma in Public Health. For such as intend to confine their attention to school work, this examination should be considerably modified so as to include the study of physical education, of mental development, and of general educational hygiene, and at the same time to omit the routine of the chemical and physical laboratory and other work relating to the control of food and milk supplies and problems of public health and sanitation with which the school doctor can never be primarily concerned.[1]

As soon as the doctor begins his work in the schools, he will find it useful to obtain first-hand knowledge of the social conditions of the people in the district where his schools are situated. It is impossible to appreciate fully the life and home conditions of the children whom he inspects, unless he understands not only the ignorance, the apathy, and the neglect of the parents but also their poverty, and the wretched housing conditions under which they live.

[1] Possibly examining bodies will see their way to dividing this examination into two separate parts, or to issuing a separate diploma of School Hygiene.

In the poorer quarters of the towns, he meets the neglectful, the criminal, the apathetic parent, as well as the honest, hardworking, underfed labourer, and the thrifty housewife who can scarcely keep her home together. Each of these sends a different type of child to the school, and the doctor must be able to understand and recognize each type. Otherwise he cannot diagnose the case, and each must be treated on its merits. In another part of the town there may be congregated the spoiled, pampered, and neurotic children of different social status. In the rural districts also he must know the parents and their ways. This first-hand knowledge is not easy to obtain except by living among the people. It is, however, possible to acquire reliable information from the teachers, and the school doctor must not hesitate to instruct himself in this way in the absence of personal knowledge.

To all these personal and professional qualities, there must be added freshness of mind and ability to undertake pioneer work. There are many problems to be investigated—social, educational, and medical; and in addition to his routine work, every school doctor should set himself to add something to the store of knowledge. The work is from the first so absorbing and so interesting, that every medical man will feel himself compelled to undertake some kind of research.

Briefly to summarize the qualifications and duties of a school doctor: He must be observant and receptive not only in regard to the children themselves, but

also as to their surroundings and conditions of work. His knowledge must be both sound and extensive; he may be almost a specialist in all subjects, without being a faddist in any. He must be broad-minded and possessed of a thorough acquaintance with general principles. He must be a rapid facial diagnoser, not necessarily a diagnoser of disease, but a detecter of any abnormal condition. He must also be well acquainted with all the possibilities of treatment, and be certain that benefit will result before he urges the necessity that the children should seek medical advice.

He must remember that his very *raison d'être* is to correct ignorance; he must, therefore, not be ignorant himself, and, above all things, must never pretend to knowledge. He must not fence with questions put by teachers: an evasive answer may be the means of perpetuating the very mischief which it is his chief desire to abolish. He must be interested in educational problems, and must understand the aims and general scope of school work in the various standards. He must be interested in child life, and acquainted with the physiological and psychological development of the child. He plays the part, as it were, of a professional pedagogue, not making the children introspective and neurotic, but, in the case of the elder children, impressing upon them the object of his visit and the need of their co-operation and good sense. He must show great sympathy and tact; he has to deal with all sorts and conditions of teachers, of whom some extend a cordial welcome, while others regard him as a merely

superfluous element in school life. In short, the school doctor's work is partly medical, partly psychological, and partly pedagogic. To quote Dr. Kerr, ' It overlaps the psychologist's field and partly invades the teacher's domain. It is difficult to say where it begins or where it ends, and, therefore, all must work together as colleagues towards the common object, the progress of education, and the physical improvement of the race.'

The personal and professional qualifications of a school doctor attached to the staff of every group of schools have now been considered. With regard to the chief school medical officer who is responsible for the organization and administration of the school medical service, little need be said. His functions have already been indicated in a previous chapter.[1] They vary greatly according to the size and conditions of the area over which he exercises control. In some places his time will be occupied entirely with supervisory and administrative duties ; in other places he may also undertake some work in connexion with special schools, physical training, or other branches of school hygiene. Elsewhere, again, he may combine with his other duties some of the work of the local school doctor.

There is little to say about his qualifications, as he generally attains his position by a process of natural selection. However, it is almost essential for the proper fulfilment of his duties that he should have gained defi-

[1] Chap. ix, p. 115.

nite knowledge of the practical routine in the schools by means of actual first-hand experience. Also, he should gradually have acquired special knowledge in regard to physical training, mental deficiency, infectious diseases in schools, school furniture, school architecture and ventilation. Such special knowledge is not to be obtained from books, but only from special study during the plastic period of mental growth. He should have gained some experience in the examination of scholarship candidates, and of pupil-teachers.

Above all, the chief school medical officer should possess capacity for administration and organization. In populous districts he will have to organize means for the treatment of school children, and, for this purpose, he must have had considerable clinical experience and be not merely an official administrator. He must of necessity co-operate with other medical officers attached to various branches of the public medical service.

CHAPTER XI

THE SCHOOL DOCTOR: HIS METHODS

First Examination Superficial.—Details of Second Examination.—Preliminary Test of Vision and Hearing.—Estimate of Physical Condition: Three Factors.—Anthropometry of Doubtful Value.—Clinical Methods Modified by Special Circumstances.—Examination of Mouth and Neck.—Heart, Lungs and Spine.—Minute Technical Research Unnecessary.—Defects of Speech: Peripheral, Habitual and Developmental.—Language of School and Language of Home.—Nerve Signs.—Mental Capacity.—Time Occupied in Examination.—Health Certificate.—Class-room Inspection; a Surprise Visit.—Its Educational value.

It remains now to consider the methods of the school doctor. The first examination of the children on admission has already been described in sufficient detail in an earlier chapter.[1] The essential point of the first examination is to discover the general fitness of the child for school life at an early age and its previous medical history, and to call the attention of parents to any obvious defects, such as squints, deformities, or ear discharges, and as to conditions of uncleanliness or of parasitic and contagious diseases. Such a medical examination only occupies a few minutes, and should be arranged to take place either on the first two or three days of each term, or on one fixed day once a week or once a month according to the number of children admitted. It is advisable that this examination should be held in the presence of parents in order to obtain accurately the child's previous medical history, and

[1] Chap. vii, p. 86.

for the purpose of calling attention to any conditions that demand immediate remedy.

With regard to the next examination, which should take place at seven or eight years of age, at the time of transference of the children from the infants' school to the girls' and boys' departments, or, better still, one term later,[1] there is need for greater care and accuracy. A preliminary test of vision and hearing may, generally speaking, be undertaken by the head teacher with the help of the school nurse, both of whom can be properly instructed in the necessary routine by the school doctor. Besides the actual saving of time involved by this practice, such a preliminary examination has the advantage of interesting teachers in the physical condition of the children, and of impressing upon them the importance of making allowance for those with defects of vision or hearing. The teachers, too, will be able to select at once those children who cannot be expected to read the vision test because they do not know their letters; and they could be taught how to deal with these children separately. In this way a great deal of time is saved, the doctor only testing again those with actual defects of vision and hearing.

Each class of thirty or forty children should be examined separately, and, as a rule, in the presence of the class teacher. The children—with bared

[1] Experience shows that during the first term the children grow accustomed to their surroundings and that the teachers have detected individual peculiarities. Consequently the work of the school doctor is easier.

shoulders, chest, and back—are brought to the doctor separately by the nurse, and the examination begins. The school doctor first notes any peculiarity or general deviation from the normal, either as to gait, general condition, appearance, size, and shape of head, or as to clothing, foot-gear, and personal cleanliness; at the same time he estimates the general nutrition and physical condition of the child. This is best calculated in numbers according to the scheme of Koppe: 1 = excellent, 2 = good, 3 = fair or average, 4 = poor, 5 = bad. Unfortunately there is no exact criterion by which a standard of physical condition may be estimated, but each doctor must, by experience, formulate his own standard which, if expressed as a figure, is in reality the component of three factors—physical stature, general nutrition, and the condition of the circulation. Therefore, if the results are to be of any scientific value, or to be intelligible to any second person, it is necessary to indicate each of the three factors by a separate figure in accordance with the following tables :—

Stature and growth.		*Nutrition.*		*Circulation and complexion.*[1]	
A healthy giant	1	Excellent muscular development	1	Ruddy and bronzed	1
Well-grown	2	Well nourished, healthy	2	Healthy pink	2
Average	3	Medium	3	Average	3
Stunted	4	Thin, or fat and flabby tissues	4	Anæmic, sallow	4
Miserable, deformed	5	Very thin	5	Pallid	5

[1] The condition of the circulation, as seen in the superficial mucous membranes, is as a rule a safer guide than the appearance of the child's complexion.

Such an estimate will take an experienced observer only a few seconds, and can be expressed in three figures. If on the other hand it is not thought advisable to take the trouble of indicating each of these three factors by a number, a general estimate may be given, and the number qualified by an adjective for the most striking factors: 2, well nourished, somewhat pale; 3, anæmic; 4, well grown, very thin and pale. The adoption of some such method as this will probably prove more valuable than the pseudo-scientific results that will be evolved from any elaborate anthropometric survey, which must occupy several minutes for each child, and even so may be inaccurate. In any case the actual weighing and measuring of the children should be undertaken by the class teacher as a regular yearly routine wherever weighing-machines are supplied. But the figures will seldom have much medical significance.

Next, the school doctor undertakes, according to somewhat modified clinical methods, the examination of the various physiological systems in order;[1] and perhaps the quickest and most systematic method of examination is to begin at the head and gradually work downwards over the body. The examination of the head as to ringworm or verminous conditions and of the ears as to any discharge has already been performed by the school nurse, while the acuity of hearing and vision have already been recorded by the teachers. It is only necessary for the doctor to re-test those who

[1] Cf. *Methods of Medical Examination in School*: Janele and Moucka. *Transactions: 2nd International Congress on School Hygiene.* vol. ii, p. 546.

are found by the teacher to be defective. But in all cases he notes the condition of the eyes, as to squints, opacities and external diseases. The examination of the eyes, though only superficial, should be precise. The doctor must discover if the child shows any objective symptoms, such as watering eyes or sticking of the lids. Irregularity of the cornea may be tested by the reflection of the window-panes to discover the likelihood of astigmatism ; the presence of synechiæ or adhesions must be detected and the state of the lens must be examined as far as is practicable in the absence of the ophthalmoscope. In this way it is possible to ascertain if there is any need for the testing of refraction or for further examination by a specially qualified oculist. Such children are referred either to the school clinic, or for appropriate treatment by a specialist.

The hearing has already been tested, and the nurse has reported as to the presence of any aural discharge. If any abnormalities are discovered, the doctor must investigate the cause. Generally speaking, it should not be necessary to use a speculum or other instruments ; but the doctor should be able to decide as to whether there is need for further examination and treatment.

Then comes the examination of the mouth. Simple inspection is all that is required. Small wooden spatulas,[1] or even the child's own pocket-handkerchief, may be used to depress the tongue. The number of decayed and missing teeth are noted as well as any

[1] E. g. the ordinary garden plant-labels.

oral sepsis or impairment of function; the child is referred for appropriate treatment by the dentist. Where a dental surgeon or assistant is attached to a school, this part of the examination may be left to him. In any case it is sufficient to ascertain only the above-mentioned particulars. Special classification is unnecessary. The shape of the palate is incidentally noted, though there is little need to record it. Enlarged tonsils can be seen, but the presence or absence of adenoids must be inferred without recourse to digital examination. In this respect great care must be exercised in referring cases for operative treatment. In the poorer quarters of the towns the majority of the children are mouth-breathers, but only a small percentage have enlarged tonsils or adenoid growths. The school doctor must exercise his judgment. Such habitual mouth-breathing can readily be overcome by the constant use of the pocket-handkerchief and by the frequent practice of breathing exercises. The doctor will indicate this to the class teacher in the case of certain children who will require special attention in this direction.

The neck is then examined by palpation in order to detect the presence of enlarged submaxillary and cervical glands. These will be discovered in the majority of elementary school children, the submaxillary being due to carious teeth and septic absorption, and the posterior cervical to verminous and uncleanly conditions of the scalp.

The doctor must then take a general survey of the child's chest development, and of the state of the

heart and lungs and spine. Old rickets and other deformities will be noted ; special care should be taken to detect the earliest sign of lateral curvature of the spine or of tuberculosis and heart disease. There is no need, however, to indicate any special methods for this part of the examination, which should be conducted in accordance with the approved clinical methods of inspection, palpation, percussion, and auscultation—eyes first and most, hands next and little, tongue not at all, except for the purpose of diverting the child's attention. Any abnormalities should be noted and the teacher's attention directed to them with definite instructions as to any necessary departure from the ordinary curriculum or school routine, such as the necessity for special physical exercises or for being excused attendance from particular classes or games.

In actual practice the school doctor should, as a rule, be able to detect at a glance whether there is any need for a careful examination or not. It is mere waste of time to percuss and auscultate systematically the lungs and heart of every child. 'Minute technical research does not suit the purposes of school hygiene, especially when the use of instruments would be necessary to ascertain all the clinical details.'[1] Either nurse or doctor should be required to see the child's bare feet so as to detect any commencing deformity, as well as to insist on the necessity of cleanliness.

Finally, there is the examination of the child's mental capacity and the general state of the nervous

[1] Janele and Moucka: loc. cit.

system. First of all any defects of speech may be noticed if the child is set to count slowly to 12, or to recite a piece of poetry. The doctor must be able to distinguish three kinds of defects: (1) *Peripheral*, due to some local defect of the teeth, palate, or lips: such defects as a cause of defective speech are very uncommon and are revealed during the inspection of the mouth, and *Central*, of which there are two kinds; (2) *Habitual*; and (3) *Developmental.*

Habitual defects include any special type or manner of speech which the child affects, often as the result of home education. Defects of this nature are very common, and are due only to habit. The child naturally imitates the language of its parents and associates, and in the poorer districts of the towns the dialect becomes, as it were, a different language—only understood with difficulty by the uninitiated. In these cases, the child has no impediment in speech, and can be taught with ease to speak correctly. Sometimes the child adopts two languages—the correct language of the school, and the natural language of the home. In the same category, also, may be placed the habitual lisp or the affected speech of neurotic and spoiled children of another social class. Habitual defects of this kind are diagnosed not only by knowledge of the type of child and of the social conditions of the neighbourhood, but also by compelling the child to imitate correct speech. *Developmental* defects of speech are due to imperfect development of the speech-centre in the brain, whereby the child is unable to

control and co-ordinate the various muscles which take part in the mechanism of speech. This condition may be diagnosed by the child's total inability to imitate particular combinations of sounds.

The presence of any of Dr. Warner's classical 'nerve signs' will have been observed already during the examination; such are asymmetrical positions seen in the balances and movement of the body, defective expression, vacancy, apathy, grinning, overaction of the frontal muscles, corrugation of the eyebrows, relaxation of the orbicularis oculi, irregular and uncontrolled movements of the eyeballs, asymmetry in the balance of the head and hands, finger twitches, tremors, and general immobility, or constant spontaneous movements; the presence or absence of any or all of these signs will enable the school doctor to make a rough estimate of the child's nervous and mental stability.

Then the doctor calls for the class teacher's report and general observations upon the child's intelligence or backwardness. Gross mental deficiency will be readily observed, and the child is recommended for admission to, or for further examination with a view to transference to, a special school. Similarly the blind and the deaf, the semi-blind and semi-deaf, as well as the epileptic and crippled, are singled out for further examination, and should not be allowed to continue in school, even if they have been allowed to proceed through all the stages of the infant school. Putting aside all these children, the doctor must estimate each child's mental capacity and decide whether it is of average intelligence and likely to derive benefit from

the educational system of an elementary school, or whether the child requires another year in the infant school, or is to be placed for a time in the backward class, or in an intermediate school. Experience alone will teach the school doctor how to decide these points, but he must learn to rely on his own judgment rather than to trust entirely to the teacher. By setting the child to read, or to do mental arithmetic, or by asking one or two of a series of carefully graduated questions which evoke certain definite mental processes before an answer can be given, and by giving fixed marks according to the way in which the questions are answered, the school doctor should be able to place each child in its proper place. The questions must be left to the individuality of the doctor. The following groups of children will be met with at this stage of their educational career (excluding idiots and imbeciles who may be represented numerically as 0) :—

Classification.	*Numerical Representation.*[1]	*Educational Prognosis.*
Mentally defective (low grade)	½	Permanent custodial treatment.
,, ,, (middle grade)	1	Permanent supervision.
,, ,, (high grade)	1½	Self-supporting, able to work and to learn responsibility.
Very dull	2	The normal 'hewers of wood and drawers of water', but likely to benefit from special instruction.
Dull	2½	
Average	3	
Quick and bright	4	
Very intelligent	5	

[1] The numerical representation here given is for purposes of definition and of comparison. The Table indicates that the difference between the

A complete medical examination of this nature cannot occupy, on an average, less than four or five minutes for each child, and if the mental capacities of more than one or two of the children have to be tested, it will be impossible for more than eighteen or twenty children to be seen during a session of two hours. Otherwise apart from any estimates of mental capacity it should be possible to examine thirty children in the same time.

As a result of each individual examination, the doctor fills up a health certificate or schedule, and issues any necessary instructions both to the teacher and to the parent. The child's schedule is passed on from class to class or from school to school, and is kept for future reference in the actual classroom in which the child is working. Those children who require more frequent supervision should be given a different coloured card marked ' under supervision '. The card recommended by the Board of Education is too complicated for ordinary use ; it serves the useful purpose of reminding the doctor that nothing should be forgotten. The issue of a uniform card is desirable, but there should be no crowding of details, and room should be left for notes and additions. Simplicity is essential. There is no need to include many details as to family or previous medical history. A convenient form of card is given on pp. 167–80.

various grades of mental deficiency and of natural dullness is sometimes very slight, whereas the difference between the average child, the bright child and the highly intelligent child is more marked.

NAME _____ SCHOOL _____

ADDRESS _____ DATE OF BIRTH _____

Illnesses previous to admission	Measles	Scarlatina	
Family History	Rheumatism	Tuberculosis	

Date						
Standard						
Without Shoes	Heights in Cm.					
	Weights in Kilos. and tenths					
Vision	Teacher					
	Doctor					
Hearing	Teacher					
	Doctor					
Age at Examination in Years Mos.						
Remarks—						

Date							
Cleanliness							
Clothing							
Physical Stature							
Nutrition							
Complexion							
Teeth							
Throat and Nose							
Eyes							
Ears							
Speech and Mental Capacity							
Remarks—							
Initials of Examiner							

With regard to other methods in connexion with the additional duties of a school doctor, there is not much to say.[1] The weekly or fortnightly visits to each school would be to help the school nurse in the diagnosis of difficult cases, or for the doctor to examine any children to whom the head teacher wished to direct his attention, such as cases of sore throat, or to see any special cases which were under observation, and to consult and to co-operate with the head teacher as to the school routine and curriculum. This visit should be a regular weekly or fortnightly fixture at each school and at this time the teacher should secure the attendance of any doubtful cases of exclusion during outbreaks of scarlet fever or diphtheria.

The annual or terminal visit to each class would be a more searching affair, and here there would be ample opportunity for the school doctor to show his special qualities. As far as possible these visits should be unexpected. Children and teachers should be taken by surprise. The doctor would first of all ask for the cards belonging to those children who were under supervision. Immediately on entry he would observe how the children were seated, and how they were working; he would note the condition of ventilation, heating and lighting and would ask the teachers if

[1] Various other points are considered in Chapter XIII. The methods of the school doctor with regard to infectious disease in school are dealt with in Chapter XVI (*b*) under 'Sore Throat'. Methods of research in school hygiene must be left to the individuality of the school doctor.

they had any complaints to make. He would study the time-table and take note of the amount of play and physical exercises. He would put the children through their breathing and other exercises, and if necessary would demand a handkerchief parade. He would examine the children as to cleanliness and ask about the cleansing of teeth. He would discover the presence of headaches, of aching and watering eyes. For instance, he should question the children as to their reading badly-printed books in dark corners or by the firelight at home. He might investigate their knowledge of the elements of physiology or hygiene.

In the case of younger girls he might select those with close-cropped hair and commend them to the notice of other children. Such an informal action upon the part of the doctor sometimes has the desired effect of inducing the younger girls, affected with verminous heads, to obtain their parents' consent to the cutting of their hair. His methods and his conduct would naturally be adapted to the age and sex of the children. He would congratulate the teacher on the brightness and intelligence of the children ; or would offer suggestions for improvements. All these simple manifestations of interest in the children's life conditions, whether at home or at school, are part of the work of the school doctor, and during these visits there is need for the expression of the various qualities of sympathy and tact, which were set out above as requisite for the

ideal school doctor. In this and in many other ways, the school doctor can make his visit to the classroom of great educational and hygienic value, of interest and stimulation to the teacher, as well as an hour of pleasure and happiness to the children.

CHAPTER XII

THE SCHOOL NURSE

School Nurse a New Idea.—Not a 'Nurse' but an Education Officer.—Her Evolution.—Daily Visits.—Want of Guiding Principles.—Pioneer Work in London.—Examples from Cambridge and Wimbledon.—Her Work (1) at the School; (2) at the Home.—Summary of Duties.—School Nurse as Attendance Officer.—Her Qualifications.—General and Special Training.—District Work Essential.—Her Personality.—Methods and Routine.—Examination for Vermin, Ringworm, &c.—Extension of Work.—Co-operation with Teachers.

THE school nurse represents as new an idea in the school world as the school doctor. She is not a nurse in the usual acceptation of the term, but a woman who has had the scientific training of a nurse. On the other hand she is not merely a sanitary inspector or a health visitor. She is an Education Officer employed by an educational authority for certain routine medical duties in connexion with education. As in the hospital, so in the school she is the doctor's assistant, and works under his direction.

HISTORY

The evolution of the school nurse is interesting. Soon after the institution of Queen Victoria's Jubilee Nursing Association in 1887, nurses began, in certain areas, to visit a few schools almost daily

for the purpose of 'attending to minor injuries and complaints, following serious or potentially serious cases to their homes and insisting on the children being taken to a doctor'. In one or two populous centres this beginning was followed by extensive developments, but the school nursing service was maintained quite independently of, and unsupplemented by, any school medical service.

The report of the Interdepartmental Committee on Medical Inspection of children attending public elementary schools, 1905, says :—

'In Liverpool and Birmingham the nurses visit the schools and attend to cases of cuts, small sores, and other petty ailments; they also, where necessary, visit the homes and instruct the parents as to the daily treatment of children. In Liverpool twenty-one schools were visited, and over 50,000 dressings have been done in the course of the last year. In Birmingham, there have been in four schools over 20,000 dressings in twelve months. It has been found best in these cases that the nurses should only work part time at their school duties, devoting the rest of their time to district nursing. Mr. Williamson, of Liverpool, who gave evidence as to the work done in the schools by the Queen's Nurses throughout the country, said that this was considered the most satisfactory arrangement as school nursing was liable to become monotonous if the nurse did nothing else; the combination of duties permits her to follow up cases she has seen in school, and enables her to be employed at times when the school is closed. In Fulham, Kensington and other districts of London the Queen's Nurses have visited schools and treated children; but this has been done independently of the local authority and the nurses appointed by them.'

At Barry, Widnes, and other places similar work was undertaken ; while at Reading a nurse was employed by the local authority to attend to the heads of verminous children. A somewhat different scheme was adopted at Wimbledon. The school nurse helped the doctor with his work in the school, but undertook no treatment herself at school. At the request of teacher or doctor, however, she visited the homes to offer her services, but always acted under the direction of the medical attendant. She also visited and treated cases at the request of parents.

So far, however, the work of the school nurse was chiefly the outcome of voluntary effort. The result was that there was not only an absence of any definite guiding principle, but also a want of general finality and completeness in the work.

The first school nurses in the newer sense of the term were appointed in 1901 by the London School Board. In contradistinction to the vagueness of their functions in the past, definite duties were at once assigned to the nurses. The duties, however, differed essentially from those that have been indicated, in being purely inspectorial and advisory. They were not required to treat cases, but were employed for the systematic detection among school children of uncleanly and verminous conditions. One of their earliest and most important duties was to examine children systematically for ringworm, and to send specimens of hair from suspected cases for microscopic investigation by the medical officer. They were also expected, from

the first, to advise teachers about difficult and doubtful cases, especially regarding the exclusion of children suspected to be suffering from infectious or contagious diseases.

Only in the event of gross neglect or ignorance on the part of parents were the nurses required to follow the children to their homes and to advise the parents. Their original powers for the exclusion of verminous children were severely restricted. They were not allowed to exclude cases for prosecution except on the authority of the school doctor. A definite school district was assigned to each nurse ; and she was instructed to visit systematically under the direction of the educational medical officer all the schools in her district. Each nurse was warned to pay due regard in her work to the necessity for exercising discretion and tact in dealing with teachers, parents and children, and to cause as little disturbance as possible of school routine. A similar scheme on a smaller scale was undertaken in Brighton.

The value of the nurse's services in school work was speedily recognized. So much so that, in 1906, a fully trained nurse, with considerable experience of district work, was appointed at Cambridge to assist the medical officer of health in his duties in the schools. She has proved useful in verifying the teacher's provisional diagnosis of suspected cases of infectious disease as well as of skin affections and of acute eye diseases. 'The medical officer of health takes action on her reports ; and, when there is doubt, visits cases himself.

The nurse visits cases weekly and in some ringworm cases applies ointments as treatment. Before issuing a return certificate, the nurse visits the child and, if necessary, takes material for examination at the Public Health Office. She also tests vision, colour vision, and hearing during the medical inspection of schools, thereby economizing the time of the medical officer of health enormously.'[1]

Although, as is often urged, it may be scarcely desirable that nurses should thus be appointed to usurp the functions of a school doctor, at the same time this report of Dr. Duncan Forbes bears striking testimony to the invaluable work which an efficient nurse can perform in the schools.

Dr. Hayward, of Wimbledon, has lately extended his original scheme and has suggested[2] that the work of a school nurse lies in two directions.

1. *At the School*, where her duties fall into two categories. She can help the doctor in his routine work of medical inspection by writing notes and instructions to parents, by undertaking examination, especially of the girls, as to verminous and uncleanly conditions, and by affording information to the doctor as to home conditions. She would also be ready to receive verbal instructions from the doctor as to the

[1] 'The work of the School Nurse under the Medical Officer of Health,' by Dr. Duncan Forbes, *Transactions Second International Congress of School Hygiene* (1907), vol. ii, p. 475.

[2] 'Co-operation of Doctor, Teacher and Nurse in Medical Inspection.' *Transactions of Second International Congress of School Hygiene* (1907), vol. ii, p. 473.

needs and future care of individual children. Secondly, it would be her duty to visit each classroom once a week to help the teachers by advice, to make notes in the medical register, to inspect the children as to uncleanliness or other obvious defects and to arrange for home visiting. She should report personally to the doctor the results of her weekly visits, thereby keeping him in touch with the schools in the intervals between his visits of inspection.

2. *At the Home*, where, by means of a personal interview, the nurse can emphasize the importance of the doctor's advice, and can demonstrate to the parents the methods of carrying out the treatment of minor ailments and verminous conditions. Her visit, therefore, becomes an important factor in the education of parents. At the same time ' she gains an insight into the home conditions, and can acquire much useful information in particular cases as regards the medical history of a child '.

Such a scheme forms an admirable model for any small town or urban district.

In London, which was the first city in any country to establish a school nursing service, the scope of the nurse's duties has recently been enlarged. But the number of schools to be visited and the number of children requiring attention have been so enormous that development has, for the most part, been confined to working out broad general principles. Regular systematic visiting of the schools has been slowly introduced and developed until the head teachers

have gradually come to place reliance upon the nurses' work; and their visits are duly appreciated. At the same time much detailed work has been undertaken in a certain proportion of the schools. In 1907 a superintendent of nurses was appointed and more recently two assistant superintendents; and at the present time there is a staff of fifty nurses working in the schools. Their routine duties as to inspection for ringworm and verminous conditions is dealt with in the chapter upon administrative routine, and the general principles of their work have already been indicated.

Duties

The duties of a school nurse in any large town may be summarized thus :—

1. To assist the local school doctor at his examinations in the schools and to carry out his instructions.

2. To keep records of progress of individual children between the doctor's visits, making special notes as to what treatment has been obtained.

3. To hold a preliminary examination of all babies and infants on their first admission to nursery schools or infants' departments as to cleanliness and obvious defects.

4. To be responsible for the supervision of personal hygiene and cleanliness of all children under the direction of a superintendent of nurses.

5. To recognize ringworm, favus, scabies and other contagious conditions.

6. To recognize discharging ears and the commoner external eye diseases, such as corneal ulceration, conjunctivitis, ophthalmia, &c.

7. To pay regular weekly visits to the schools for these purposes and for advising teachers in regard to the exclusion of doubtful cases of infectious and contagious diseases.

8. To weigh and take the height and chest measurements of children where any system of anthropometry is introduced or to help the teacher in so doing.

In addition to these specified duties, occasion for home visiting will necessarily arise in the course of a school nurse's work. At the present time it is impracticable to organize any adequate or satisfactory scheme of home visiting in the populous districts of large towns,[1] especially as the scheme would involve enormous expenditure. But the desirability of gradually replacing school attendance officers by school nurses has often been suggested, and in process of time the suggestion may eventually be adopted.

Furthermore, there must be a nurse attached to the staff of each special school for physically defective and debilitated children as well as of each open-air school. In this work her training as a hospital nurse is indispensable; for she is required to take charge of the crippled, delicate and ailing children between the doctor's visits. She is responsible for their proper conveyance in the ambulance to and

[1] Cf. chap. v, p. 68, where the inadequacy of any system of home visiting is indicated.

from the school. She must also be adequately trained in the principles and practice of physical education, so that, besides helping the teacher to conduct special physical exercises applicable to children suffering from deformities, paralysis or heart disease, she may herself be qualified to undertake courses of massage and of remedial exercises for individual children.

Finally, if any system of treatment is undertaken by local education authorities, such as the establishment of school clinics for the treatment of the more chronic diseases of childhood, there will be further opportunity for extending her sphere of activity.

Briefly, then, the work of the school nurse has now become so comprehensive that the time for vague generalities is past. In small towns and in rural areas Education Committees will be able to employ the part-time services of district nurses ; and with this idea in view, County Nursing Associations should be properly organized in every county area, partly for the more efficient conduct of midwifery and general nursing and partly for the adequate development of medical inspection of schools. But in the populous centres and in large urban districts a school nurse's sphere of activity is so wide, and her work so difficult, that she must devote her whole time to her school duties. Nor is there any real monotony in the work.

In any case, the school nurse is definitely an education officer, and not merely a district nurse or health visitor employed in the schools. Her first instinct

and duty must be to promote the efficiency of school routine by increasing the attendance and improving the health of the children as well as by advising the teachers on difficult questions. At the same time her work should be directed towards the education of the children in the principles of cleanliness and of healthy living. She should be interested in the simpler problems of school hygiene and should call the attention of the teachers and children to the necessity of open windows, to the harmfulness of wet clothes and boots and to other similar matters. Incidentally she should take notice of all sickly and ailing children and should endeavour, when necessary, to get medical assistance. Sometimes she may be able to obtain the help of voluntary societies for the purpose of sending a child to hospital or into the country. By these and similar methods she may hope to train the parents, through their children, to aim at a higher standard of health and comfort in the homes.

On the other hand, the school nurse should not be allowed, as part of her ordinary routine, to attend to sores and bruises, or to bind up cut fingers and chilblains. Thereby is introduced a scheme which, although at one time advocated by the Board of Education, has been characterized by the British Medical Association as embodying an unsound principle. For any such system tends to waste time, to appeal to benevolent sentimentality, and to undermine parental responsibility.

Qualifications

For the efficient discharge of these duties the school nurse must have had general and special training and be possessed of certain personal qualifications. Her general training should have been adequate, consisting, for instance, of three years' work in a large general hospital of not less than 100 beds, or in an infirmary authorised as a training school by the Local Government Board. A period of this hospital training should have been specially devoted either to out-patient work, or to duty in a special department for skin diseases or for orthopædics. In addition to this general training she requires special training for the further period of at least one year. Six months should be spent in the wards and out-patients' department of a children's hospital, and for three months she should attend the practice of a hospital for skin diseases, and another three months should be devoted to the study of infectious diseases.

After such a systematic course of training a nurse should be capable of undertaking school duties. But much would be gained if her appointment were postponed until she had devoted a year or two to district work. Later there is little doubt that this part of her training will come to be regarded as the most essential qualification, because it tends to widen her outlook and to develop all the best womanly qualities in contradistinction to the somewhat narrow

and restricted life of a hospital nurse. Her work will often be harassing and troublesome. Consequently she should be gifted with a large share of human sympathy and true kindliness of heart, combined with good humour and firmness of temper. Her powers of observation should be especially cultivated, for she is brought into touch with a new sphere of life. Above all, tact, personality and strength of character are greatly needed in a school nurse, required as she is to work in co-operation with the school doctor, teachers, children, parents, school managers, attendance officers, the medical officer of health, sanitary inspectors, women health visitors, and district nurses.

Methods and Routine

There is no need to discuss the methods or routine of the school nurse in a country district, seeing that the school work will have to be fitted in with other duties. Experience alone will decide the best method of procedure.

In towns a school nurse should visit each school in her district at least once a week and should pay a special visit to each classroom once a month for the purpose of keeping in touch with the teachers and for seeing the children who are 'under supervision' and for other general duties.

For carrying out her examination as to the cleanliness and personal hygiene of the children, each nurse ought to carry a bag containing a metal comb, a pointed

glass rod, ringworm forceps and spirit lamp, as well as permanganate of potash crystals and corrosive sublimate tabloids as disinfectants. For the examination of verminous conditions of the head, she may separate the hair with her metal comb or glass rod, which should be dipped into the disinfectant lotion between each examination. This is rather a tedious and unsatisfactory process, and it is generally preferable for the nurse to use her fingers. There is no occasion for her to wash or disinfect her hands between the examination of each child, as the risk of transferring vermin is more imaginary than real.

When, in the course of such an examination, the nurse discovers a case of ringworm or of suspicious scurfiness or scaling of the head, she should place the child on one side for later examination. She should thoroughly disinfect her comb or glass rod or, as the case may be, wash her hands with soap and water, before proceeding to the next child. After removing stumps of hair in suspected ringworm cases, the forceps must be sterilized in the flame of the spirit lamp. By such precautions as these any danger of transferring infection from one child to another is prevented.

In the conduct of this ordinary routine work there is no need for privacy. Each child should be examined in its turn either in the classroom or in the hall, unless special accommodation is provided. Objections to this routine examination of children in front of their classmates is raised only by unreasonable parents or by those whose pride has been wounded. Generally

speaking, parental pride is more affected by the discovery and tacit exposure of the children's uncleanliness than by the fact itself; and such parents are disinclined to take any remedial or preventive measures unless their neglect is exposed.[1]

With regard to the examination of the more uncleanly children for verminous conditions of body and clothes, some privacy may be necessary. Arrangements for the inspection of such cases must be left to the judgment of the head teacher and nurse.

Miss Pearse, the superintendent of nurses in London, has recently discovered that verminous conditions of bodies and clothes are more prevalent in the dirtiest schools than is commonly supposed. For instance, she reports as a result of cursory examination, 'that at one school she found 12 out of 55 boys in one class, 10 out of 60 girls and 8 out of 54 infants with verminous clothes; while in another school there were 43 boys out of 135 in a similar condition. These proportions are fortunately characteristic only of the dirtier schools, but of these there are very many'.

For the examination of children suffering from sore eyes, discharging ears, skin affections and other simple ailments the nurse should adopt the ordinary clinical methods of inspection. No exact diagnosis is required. But a nurse must be able to recognize the simpler diseases and should know when a child needs medical advice or treatment. She must also be acquainted with the conditions which demand exclusion from

[1] See footnote, p. 294.

school so that her advice to the head teacher may be reliable. In the case of infectious and contagious conditions she must advise the immediate exclusion of children in the interests of other children ; and in the absence of medical advice she must be prepared, in cases of obvious overpressure or of commencing chorea to advise temporary exclusion until a medical opinion can be obtained.

The functions of a school nurse are likely to be extended in many directions ; but, if the teachers are not in harmony with the work, difficulties will inevitably arise. Experience in London, however, has shown that the majority of teachers, so far from objecting to the nurse, have constantly asked for more frequent visits, and have, from the first, taken a pride and interest in the cleanly condition of the children attending their schools. Such co-operation is essential for a satisfactory and efficient school nursing service.

CHAPTER XIII

ADMINISTRATIVE ROUTINE

Distinction between Medical Inspection and School Hygiene Artificial.—Routine in London.—General Medical Supervision.—Medical Register in Schools.—Vision Testing.—Regulations as to Infectious Disease.—Scarlet Fever.—Diphtheria.—Measles.—Cleansing Schemes.—Routine of Special Schools.—Medical Certificates.—Scholarship Candidates.—Secondary Schools.—Annual Reports.—'Medical Room.'

It is impracticable, and indeed almost superfluous at the present time, to give any account of the administrative routine of medical inspection of schools necessary under the Education (Administrative Provisions) Act, 1907. The requirements of the Act and the regulations of the Board of Education have tended to make an artificial distinction, where none should exist, between medical inspection and school hygiene. The result is that, until the fundamental principles of school hygiene have been fully grasped, there is little opportunity for the application of any general system of administrative routine.

For the time being each local education authority will necessarily make its own administrative arrangements in accordance with local conditions and local requirements. The routine will differ widely according to the area and according to the particular system of inspection that is adopted. The present chapter, how-

ever, aims at giving a few general notes upon the administrative routine applicable to large towns—say, with more than 100,000 inhabitants—in which the school medical service is co-ordinated with, not subordinated to, the sanitary service. These notes are modelled upon the scheme which has been in force, since 1902, in London,[1] where the main object has been gradually to develop the whole field of school hygiene rather than to devote much time to the systematic and routine examination of large numbers of children. The latter course would have been impracticable without an enormous staff of school doctors, and is even, at the present time, of little value until some special provision has been made for the treatment of defective children.

General Medical Inspection. Each school doctor has a certain district allotted to him and is expected to make a systematic visit to each department of every school in his district once in three months. Before making this visit he sends a notice to the head teacher stating that he will visit the department three days hence and asking that the names of all children known to present any conditions likely to affect seriously their education or future life be placed upon a suitable form (No. 21).[2] When the doctor visits the school, he deals

[1] The author is indebted to Mr. E. Greer, chief clerk in the Medical Officer's Department of the London County Council (Education Committee), for invaluable help and co-operation in the preparation of this chapter.

[2] This and similar numbers in the text refer to the forms and schedules in Appendix III, p. 330–7.

first with this list of children, makes notes in the column provided for this purpose, and advises the head teacher in special cases. The doctor then goes round the classes and notes any children with external eye diseases, squints, nose and throat affections (enlarged tonsils, adenoids, mouth-breathers, &c.), impetigo, discharging ears, excessive dirt, or other defects. He then turns his attention to the items set out on the form used for his report to the chief medical officer (Education); he notes the number present, number examined, the general arrangement of the school (environment, &c.), the general conditions of the school (window and artificial lighting, heating, ventilation, sanitation, desking, &c.); the hygiene of school work (hours of work, modes of work, reading, writing, drawing, manual work, recreation, exercise, &c.). After the examination, his report is completed and forwarded to the head office, where the general conditions of the school are tabulated on a card (No. 62) and the various officers (e. g. architect, supply officer) informed of any defective conditions which require to be remedied.

The records of all school work should be kept as far as possible on cards, as they are so much more easily handled for statistical purposes in regard to any particular subject. A corner is cut off each card, so that when they are sorted with the cut corners in one direction the same side of all cards is uppermost.[1]

Medical Register. In each department a medical register is kept. This register affords ready means of

[1] See schedule, chap. xi, p. 167.

communication between the medical officer (Education) and the managers of the school. The school doctor makes notes in one column of this register in regard to any school conditions, or to the condition of individual children, in which the managers could assist in having rectified. The school nurse is also allowed to enter the names of neglected children where the managers might have them relieved. The managers make notes in the second column and the head teacher states in the third column what action is ultimately taken. This register is submitted to the managers at all their meetings.

Vision Test. The vision testing is not done at the time of ordinary inspection, but in the summer when there is a good light. The preliminary test is made by the teachers. A communication is addressed to each head teacher asking him to test the vision of the children in his department in accordance with the instructions set out in Article 110 of his Code. The instructions are briefly these :—

A large test card is fastened to the wall in a good light so that the bottom line is about the level of the child's eyes. The distance of 20 feet (6 metres) measured from it on the floor and marked in chalk with a cross gives the distance at which the child to be tested should stand.

Children having good vision should be able to read the test letters in the bottom row, marked on the card D = 6. If they fail, they should be called upon to read the letters in the second line from the bottom, marked D = 9. Children who cannot read the letters in either of these lines should be requested to read the

letters, beginning from the top of the card, and going downwards until they reach a line they are unable to read. The lowest line read gives the measure of visual acuity.

Only the names of children in Standards I, II, III, and IV, whose vision is 18 or worse, and of children in Standard V and above, whose vision is 12 or worse, should appear on the teacher's return.

Each child tested should have the number (6, 9, 12, 18, 24, &c.) expressing his visual acuity noted in the column provided for the purpose in the attendance register.

Children wearing spectacles should be regarded as having the vision they attain when wearing their glasses.

A supply of forms is forwarded on which the names of all children with defective vision are placed, together with their standard and age.

Directly the vision test has been completed, this return of children with defective vision should be forwarded to the medical officer (Education).

The lists are returned to the head office, where a summary form is attached, and these are then sent to the school doctor. The doctor, after due notice to the teacher, visits the school and examines all the children returned by the head teacher and selects those who require further attention or treatment. For each of the children thus selected he gives to the head teacher a red or green card, according to the seriousness of the defect. On the cards are printed instructions and warning to parents and guardians. The head teacher distributes a certain number of these cards each week with a view to limiting the number of children that attend hospital at one time. The presen-

tation of these cards at a hospital or to an ophthalmic surgeon signifies that the children have been seen by a qualified practitioner.

The doctor completes the summary form, which affords a comparison between the number of defects reported by the teacher and those selected by the doctor. At the same time he reports on any matter specially affecting the children's vision, and forwards his report to the head office. On receipt of this return, the attention of the medical officer is drawn to any excessive defect of vision, and any conditions affecting the children's vision are made the subject of special investigation.

As many parents could not afford to purchase the glasses which were prescribed by hospital authorities, an association was formed for obtaining glasses for school children at wholesale prices. Each head teacher is supplied with a copy of the association's circular with a view to his co-operation in the scheme. The association almost immediately effected a great reduction in the price of spectacles as supplied at the hospitals by the leading opticians.

Infectious Diseases. The Public Health (London) Act, 1891, requires that, so soon as it becomes known that an inmate of a house is suffering from an infectious disease, the medical attendant shall forthwith send a certificate to the medical officer of health for the district; and, if the patient attends school, or is resident in a house in which there are school children, the medical officer of health is required to forward

a copy of the certificate to the head teacher of the school concerned within twelve hours.

The head teacher of the school then acts in accordance with instructions set out in Article 111 of his Code.

SUMMARY OF REGULATIONS AS TO EXCLUSION OF CHILDREN FROM SCHOOL FOR INFECTIOUS DISEASES.

Disease.	*Exclusion of children suffering from the disease.*	*Exclusion of children living in houses where the disease exists.*
Diphtheria.	(1) If the case treated at home until a medical certificate based upon bacteriological examination is furnished. (2) Until a fortnight after date of discharge from hospital.	Until 7 days shall have elapsed after the date of the certificate from the medical officer of health that the house is free from infection. In the event of the head teacher not receiving the certificate, it becomes his duty to send to the offices of the local sanitary authority, in order that he may procure it.
Scarlet Fever.	(1) If the case is treated at home until the medical attendant certifies. (2) Until a fortnight after date of discharge from hospital.	
Erysipelas and Typhoid Fever.	(1) If treated at home until the medical attendant certifies. (2) Until after discharge from hospital.	Not to be excluded. Attendance not enforced if medical officer of health specifically orders exclusion.
Measles.	At least one month.	*Infants.*—To be excluded until Monday following 14 days from occurrence of *last* case. *Seniors.*—If child has had the disease, not to be excluded. If child has not had the disease, exclude until Monday following 14 days from occurrence of *first* case.

Disease.	*Exclusion of children suffering from the disease.*	*Exclusion of children living in houses where the disease exists.*
Whooping-cough	As long as the cough continues, but not to be re-admitted until at least 5 weeks from the commencement of whooping.	*Infants.*—All infants to be excluded 2 weeks. *Seniors.*—If child has had the disease, not to be excluded. Otherwise, exclude 2 weeks.
Mumps.	One month.	*Infants.*—All infants to be excluded for such time as medical attendant considers necessary. If no medical attendant for 3 weeks. *Seniors.*—If child has had the disease, not to be excluded. If child has not had the disease, exclude for the same period as infants.
Chicken-Pox.	Two weeks, or until every scab is off scalp and body.	*Infants.*—All infants to be excluded 2 weeks. *Seniors.*—If child has had the disease, not to be excluded. If child has not had the disease, exclude 2 weeks.
Ringworm, Favus, Ophthalmia (Blight), Trachoma, Scabies (Itch).	Until medical certificate is obtained that the child is cured. Wherever certificates are not readily procurable, teachers to exercise their discretion as to re-admission, and, if in doubt, ask school nurse.	Not to be excluded.
Consumption.	Exclude if the disease is accompanied by coughing or spitting.	Not to be excluded.

NOTE.—If a medical attendant or the medical officer of health should certify, in any special case, that periods of exclusion should be extended, teachers are to observe their instructions and to communicate at once with the medical officer (Education).

On receipt of the notification from the medical officer of health, the head master notes the information and sends the notification to the other head teachers. Each head teacher concerned then sends a copy of a form to the medical officer (Education) and to the divisional superintendent, giving particulars of all children in the school coming from the same house.

In the cases of non-notifiable diseases the first information is generally obtained from the head teacher. As soon as the head teacher receives information that a child is suffering from a non-notifiable disease, or comes from a home in which such a disease exists, he forwards full particulars on a convenient form, not only to the medical officer (Education) and divisional superintendent, but also to the medical officer of health for the district. When these forms are received at the head office, they are at once entered in a register, a folio of which is devoted to each school. On this folio are noted the name of the school, the electoral area, the sanitary district, the departments of the schools, and day by day the number of cases of the principal diseases affecting school life. When the cases have been entered in this register, each of the diseases receives different treatment.

Scarlet Fever. When a significant recurrence of cases suggesting the possibility of school infection is noticed, the cases are tabulated on a special form,[1] according to their class distribution. In this way the

[1] See Appendix III, p. 333, Form No. 4.

medical officer (Education) is generally able, from his special knowledge of school dissemination, to locate the source of infection and to take action either by investigation at the school or by class closure.

When two or more cases have occurred in one classroom within a period of three weeks, or when one child, who subsequently develops scarlet fever, has shown definite symptoms of indisposition in school, a special communication is sent to the head teacher instructing him to keep a list of absentees from the affected classroom, and to make careful inquiry on their return as to sore throats. He is also instructed to regard any variety of sore throat with great suspicion. By these means, the possibility for mild and unrecognized cases being allowed to remain in school is reduced to a minimum. All cases which are excluded from school on suspicion are immediately reported to the medical officer of health for his information, and in this way he is enabled to discover missed cases. If, however, there is a continued occurrence of cases in one or two classrooms, an assistant medical officer is sent to make a special investigation at the school in accordance with a definite procedure, and he is generally able, without much difficulty, to discover the source of infection and to prevent unnecessary closure of the affected classroom.

If the Medical Officer (Education) decides on closure, instructions are telegraphed to the head teacher and the medical officer of health is informed by telephone.

The heads of the other departments in the Education Office are also informed, so that evening tenancies and children's meetings may be suspended.

Diphtheria. The notifications of diphtheria are entered in a special register in which are given the names of all children suffering and excluded for house infection, with the dates, departments, and classrooms. This register is kept under observation by the assistant medical officer, who is responsible for this special disease. When diphtheria appears in a school, the head teacher is instructed to exclude from affected classrooms all children suffering from sore throats, until a certificate, based upon bacteriological examination, is presented, or until further instructions from the head office have been received. A supply of cards (No. 7) for distribution to the parents of affected children accompanies this instruction. The medical officer of health for the district is informed immediately. If the disease shows signs of spreading, the assistant medical officer visits the school and takes a culture from the throats of any suspicious children. These cultures are incubated at the head office ; and as soon as the results are known, the head teacher is instructed by telegram to exclude children whose cultures yield diphtheria bacilli or organisms of a suspicious character. The medical officer of health is immediately informed by telephone, and a notification form is duly forwarded by post.

Measles. Information as to whether or not a child has had an attack of measles is obtained by the head

teacher when the child is admitted to the infants' department, and is duly recorded. When, therefore, the head mistress notifies to the head office the occurrence of a case of measles, she at the same time furnishes information as to the number of protected and unprotected children in the affected classroom. At the head office these notifications are entered in the general register, and when the cases suggest the possibility of school infection, they are tabulated on a special form,[1] according to their class distribution, and submitted to the medical officer or his assistant. Class closure is now seldom resorted to, but the unprotected children are excluded for a certain term of days, when the second crop of the outbreak is expected. The application of this routine requires very careful consideration, but, if scientifically applied, it is possible to limit, to a certain extent, the outbreaks at school without undue loss of attendance on the part of the children. In case of class closure the head teacher is communicated with by telegram, and, before the children are sent home, each one receives a card (No. 6) cautioning the parents to keep their children under careful observation, both for their own sakes and for the sake of others; and also pointing out the seriousness of the disease. When, however, only the unprotected children are sent home, a different card is given to each child.

School Nurses. The duties and methods of the school nurse, and the examination of children suffering from

[1] See Appendix III, p. 333, Form No. 5.

parasitic and contagious diseases, have already been considered in a previous chapter.

With regard to administrative routine, and in order that the work may be systematically done, the nurse devotes the morning of each day to the schools in rotation, and the afternoon to particular schools. This ensures that every school is visited at least once a month. A notice of the intended visit is sent to the head teacher several days beforehand, so that any doubtful out-of-school cases may be presented to the nurse. At the end of the week each nurse forwards a report to the head office. These reports are gone through and any queries answered. In addition, once a month each nurse goes through her weekly reports and general work with the superintendent of nurses.

Cleansing Scheme (Heads). Unclean heads are a frequent cause of absence from school, causing serious loss of attendance. The cleansing scheme is applied with a view to remedying this condition. The most unclean school in each district is selected. The head teacher is informed by letter from the head office that the scheme is to be applied. The nurse visits the school and notes all children with unclean heads ; she then supplies the head teacher with a white card for each child whose head requires to be cleansed. This card draws the parents' attention to the state of the child's head and gives directions as to cleansing. The cards are enclosed in sealed envelopes and given to the children to take home.

At the end of the first week all cases not treated are

separated from the other children in class, and a red card is served on the parents by the attendance officer warning them that, if the condition is not remedied at the end of a week, the child will be excluded from school and that they will be prosecuted.

At the end of the second week the superintendent of nurses visits the school and excludes those children who have not been cleansed, and forwards the names to the head office. From the head office the divisional superintendent is instructed to prosecute. During the time which must necessarily elapse between the date of exclusion and the hearing of the summons, any children who are presented at school are readmitted and, if found clean, are allowed to remain, but if still unclean, they are again excluded and the prosecution goes on. About 13 per cent. of excluded cases are fined.

Cleansing Scheme (Bodies). The mode of procedure is similar to that adopted in regard to cleansing the heads. When the nurse finds children whose clothes and bodies are so verminous as to be unfit for school, she excludes them and forwards the names and addresses to the head office. These names and addresses are forwarded to the medical officer of health for the district, whose inspector delivers a card stating that the children can have a warm bath and have their clothes sterilized free of cost at certain hours on specified days. The London County Council in their General Powers Act, 1907, obtained powers to cleanse children in case of parental default ; but the provision by the

local sanitary authorities of adequate means for cleansing children has proved impracticable. The Children Act, 1908, however, which comes into force in April, 1909, places the responsibility of selecting and cleansing these children upon the education authority. Such a course will have the great advantage of differentiating between the cleansing of children and the cleansing of vagrants and beggars under the Cleansing of Verminous Persons Act. 'It is a further step in the direction of trusting all public duties, as to the care of a child as a child, entirely to the one authority which is concerned with his physical and mental development during school life.'[1]

Ringworm. Another part of the nurse's work is the detection of ringworm. With so much experience the nurse's judgment is quite reliable. In most cases, however, stumps removed from affected heads are forwarded in small envelopes to the head office. These stumps are examined microscopically. If found to contain ringworm, the head teacher is instructed to exclude affected children. The divisional superintendent and school nurse are also informed.

In many of these cases doctors have given certificates that the children are free from infection, but in nearly every case the child is found to be suffering from the disease.

Special Schools (Admission). Under the Elementary Education (Defective, Epileptic, Blind and Deaf)

[1] Annual Report (1908) Medical Officer (Education) London County Council.

Acts certain children may be sent to special schools, if they are certified by a duly qualified medical practitioner approved by the Board of Education.

Children attending ordinary elementary schools are nominated for medical examination under the Acts by school doctors, teachers, divisional superintendents, managers, charitable bodies, and others. Special forms are used for both mentally and physically defective children.[1] At the head office an index is kept in which are entered the names of all children who have come under notice. On receipt of a nomination form, reference to the index is made in order to prevent duplication of work. If the child has not been seen on a previous occasion, the form is numbered and allocated to the local examination centre nearest to the child's home. General particulars are transferred to a card. The dates of these local examinations are advertised in an official paper issued weekly to teachers and others. Several days before the examination is due a notice is sent to the head teacher of the school at which the child attends, or to the divisional superintendent, asking them to arrange for the child to be presented. They also inform the parents. In the meantime the nomination form, with full details, the registration card, and all papers connected with the case are sent to the school, addressed to the doctor. No child is examined without a registration card. The lady superintendent of special schools, or one of her assistants, attends and helps in the examination, and

[1] See Appendix III. Forms Nos. 8 and 9.

allocates the children to the most convenient centres. One or other parent, and often one of the teachers, are present. The doctor makes brief notes of each child's mental and physical condition and adds instructions with regard to the need for any special educational routine. He then states on the card the kind of school for which the child is suitable (elementary, physically or mentally defective, imbecile, epileptic colony, open-air, &c.). All cards and papers are then returned to the head office and the officers concerned informed of the results of the examination. Examinations are held twice a year at each centre for mentally defective children (of which there are 85 in London) and once a month at each physically defective centre (of which there are 27 in London).

Should children come before the doctor with special defects which cannot be dealt with satisfactorily at a local centre, a note to this effect is made on the card and arrangements are made for the cases to be seen by the medical officer (Education) at the head office. This routine applies especially to blind, deaf, and morally defective children.

Special Schools (Centres). In addition to the admission examination, all children on the roll of special schools are examined once in six months. For this purpose the doctor visits the centre, examines the children, and makes notes in regard to their progress or otherwise in the family history and progress book kept at the centre. If there is any child in the centre who should be transferred elsewhere, or be exempted

from the special school, a report is made on a special form. This report is sent to the head office and arrangements are made for the necessary transfer.

Medical Certificates. The Board of Education requires a medical certificate for each child passed for a mentally or physically defective centre. These certificates are made out from the examination cards. In those cases in which the parents refuse to send their child to a special school, a certificate signed by the examining doctor is supplied for prosecution purposes.

Examination of Candidates. All candidates for employment in schools are medically examined as to their physical fitness. Many of these candidates come under observation as junior scholars. Before they are granted a scholarship they have to satisfy the medical officer as to their physical fitness. When they are summoned to attend at the head office, a form asking for details as to family history is sent. This form must be filled in by the parent or guardian and returned to the head office. When the form has been received the more important particulars are transferred to a special card which, together with the form, is placed in the hands of the doctor who examines the candidates. If the candidate is satisfactory in all respects, a certificate is forwarded to the Committee concerned. If there is any condition which requires to be remedied, various forms are issued for the instruction of parents or guardians. Defective vision, defective teeth and uncleanliness must be suitably remedied. When the condition has been remedied, the candidate again

attends for re-examination or forwards a certificate from a dentist or an oculist, as the case may be.

Secondary Schools. The majority of these scholarship candidates are kept under observation by the doctors attached to the secondary schools, and, when they are seen, fresh notes are entered on the back of their medical record card. When these candidates are transferred to pupil-teachers' Centres, the record cards are transferred with them; and when they go from the pupil-teachers' Centres to the Training Colleges, the record cards are also sent. By this method teachers are kept under medical observation during part of their school life and during the whole of their training; and should any physical condition present itself which would ultimately render the student unfit to take up his profession as a teacher, his course at once comes to an end. In this way not only useless expenditure, but also ultimate disappointment to the student in after life, is avoided.

Annual Reports. With regard to the writing of reports, the Board of Education has issued some suggestions in Circular 596.[1] The Board suggests that an annual report of a school medical officer should deal with the following matters :—

(*a*) General review of the hygienic conditions of the schools.

(*b*) Arrangements for co-relation of school medical service with the public health service.

(*c*) General statement as to the extent and scope of

[1] See Appendix II. C. p. 320.

medical inspection in the area of each education authority.

(*d*) General view of facts disclosed by medical inspection.

(*e*) General review of social and industrial conditions in their relation to the health and physical condition of the children.

(*f*) Review of methods employed, or available, for treatment, including a record of the school nurse's work.

(*g*) Review of action as to infectious disease.

(*h*) Review of methods for dealing with blind and deaf children as well as the mentally and physically defective, under the special Education Acts.

(*i*) Review as to the methods and results (1) of instruction in temperance and hygiene and (2) of physical exercises; and as to the arrangements for open-air recovery schools.

Such a report would include a very broad and comprehensive statement as to medical inspection of schools in its fullest sense. But, as the Circular itself says, ' it is recognized that in many, and indeed in most cases, such a degree of comprehensiveness will not immediately be attainable '. In one direction, however, the scope of an annual report might be supplemented so as to include some reference to the progress of educational hygiene, under which would be mentioned any work upon the questions of fatigue and upon the physiology and psychology of educational methods.

A few practical points have been emphasized by Dr. Kerr, who alone of school medical officers has

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gained experience in the writing of reports. Dr. Kerr suggests that it is advisable to take up the consideration of one subject in each annual report and to deal with it thoroughly and exhaustively. In such a case a brief sketch of other branches of school work is sufficient.

With regard to statistical tables for comparative purposes, Dr. Kerr insists upon the observation of the following rules :

(*a*) The analysis should be according to the children's age, which should be stated in years and months. The age last birthday is the most convenient form of expression. Occasionally there is value in statistical records relating to a number of children born in certain years.

(*b*) The analysis should be according to sex, each of which should be stated separately. During any investigations different coloured cards should be used for boys and girls.

(*c*) The total number of children (boys and girls) dealt with must be indicated. The number of normal must be given together with the number of abnormal. In the case of percentages, the number of children from whom the deductions are drawn must be stated.

(*d*) Some indication of the social status of the children examined, however indefinite it may be, should be given.

(*e*) Analysis of results, according to school standards, represents an indefinite basis, though scientifically it affords a more reliable estimate of a child's mental capacity than the teacher's unchallenged judgment.

Through neglect of these simple rules many of the tables and statistics relating to school children, not

only in England but also abroad, have been of little value for comparative purposes.

Medical Room. With regard to the statutory inspection of the children, the Board of Education requires that 'the inspection should be conducted in school hours and on school premises, and in such a way as to interfere as little as may be with school work.' These points give rise to a difficult problem. In a large school there is seldom any difficulty in finding a convenient room that can be placed at the disposal of the school doctor during certain fixed hours every week—when, for instance, one of the classes is absent for manual instruction, or for laundry or cookery work. In some cases it may be necessary to partition off, by means of screens, a corner of the central hall. In infants' schools it is generally possible to make use of the babies' classrooms without any undue disturbance of school routine. At some schools head teachers have placed their private rooms at the disposal of the school doctor, but the adoption of this practice should not be allowed. In small country schools, and in some of the non-provided schools in towns, the doctor has the utmost difficulty in securing a room for his work. In towns the difficulty may be overcome by the establishment of special centres for the purposes of medical inspection: but in small country schools, consisting of only one or two rooms, the difficulty will remain unsolved until provision is made in the plans of all future school buildings for an additional room for the use of the school doctor.

CHAPTER XIV

MEDICAL TREATMENT AT SCHOOL

A Serious and Urgent Problem.—Recognized by Parliament.—Medical Treatment the Natural Corollary of Inspection.—Facts and Figures.—Chronic Disease alone calls for Consideration.—Ringworm.—Favus.—Verminous Conditions.—Defective Teeth.—Defective Vision.—Chronic Ear Disease.—Other Chronic Conditions.—Their Effect on Education.—Special Circumstances: Prolonged Absence and Illiteracy; Injury to Physique and to Prospects in After-life.—Complicated Factors of the Problem.—No Single Root Evil.—Existing Institutions for Treatment.—The Family Doctor, Hospitals and Poor Law Dispensaries.—How to Solve the Problem; Four Schemes.—Laissez-Faire Policy.—Hospital Reorganization.—Poor Law Methods.—Municipalisation of Medical Services.—These Schemes Inadequate.

A FURTHER problem demands immediate consideration. Are we to be content with mere inspection of the children's defects, or are we to proceed to some system of remedial treatment? Parliament has recognized the urgency of the question and has empowered local education authorities to make arrangements for attending to the health and physical conditions of the children. The intention of Parliament is supported by an official memorandum (Circular 576) on medical inspection of children in public elementary schools issued by the Board of Education under Section 13 of the Education (Administrative Provisions) Act, 1907. The memorandum says 'The aim of the Act is practical and it is important that local education

authorities should keep in view the desirability of ultimately formulating schemes for the amelioration of the evils revealed by medical inspection '.

Now medical inspection is only in a very early stage of evolution. Consequently every school doctor goes through the same processes of reflection and self-education. At first he enters the school as a novice, recognizing that his duty is to inspect, not to treat, that his own position is open to attack on the part of his brother practitioners, that he may be interfering with the rightful responsibilities of parents. He is so absorbed in the new work, the new ideas, so interested in the children, the educational system and the teachers, that, as soon as he has notified parent and teacher that a child is suffering from some particular disease, leaving them to take whatever further action may be necessary, he considers that he has done his part. It is not until he returns a year later, that he realizes how completely his advice has been ignored. Then, he begins to think.

All school doctors go through the same phase—with the result that in course of time they are to be found in one of two camps. Either they still adhere on theoretical grounds to the old mental attitude; or, in the ardour of their new enthusiasm, they press for some form of State or municipal treatment for the children's needs. It is the purpose of this chapter to analyse these two disparate points of view.

It is obvious enough that medical inspection by itself is insufficient, serving, as it does, very little practical purpose unless followed by its natural corollary, treat-

ment. In Switzerland, and it may be in a few other countries, about 90 per cent. of the children discovered to be defective actually seek advice and obtain remedial or palliative treatment for their defects. But this is not the case in England. For instance, in London, where there are innumerable doctors and specialists as well as free dispensaries and hospitals, it has been found that only about one third of the children reported to their parents to be suffering from markedly defective vision seek advice of any sort, and even of these the majority do not obtain any remedial treatment. The same percentage holds good for children suffering from chronic ear disease. With regard to diseases of the skin and scalp, a large proportion of children seek advice, but only a very small number obtain satisfactory and adequate relief. The result is, that in London and other large cities probably not one tenth of the defective children are adequately treated or materially benefited. Hence it is clear that more than half the labour and expense of medical inspection is thrown away.

What, then, are the best means of ensuring efficient medical treatment? In considering this momentous question, there is need of some convenient distinction between different diseases. The treatment of acute conditions such as pneumonia or appendicitis, of such minor ailments as bruises, blains and cuts, of all diseases which are readily and rapidly cured, of all accidents and emergencies and of other conditions not necessarily incidental to school life, may be

dismissed from present consideration. For, in the case of such purely accidental conditions, it is not incumbent upon the school authority to interfere with the existing agencies by which they are ordinarily remedied. Thus a child suffering from pneumonia or appendicitis is either treated at home by a general practitioner, or is admitted without any further question to a hospital. Again, any treatment by a public authority of minor ailments, such as cuts and bruises which tend to heal without interference, would obviously justify the charge of ill-considered charitable benevolence,[1] which may be largely a matter of sentiment and statistics,—an objection constantly urged against the work of at any rate one well-known institution.

But with regard to certain chronic affections and diseases which are frequently neglected by general practitioners and only inadequately treated at hospital, the circumstances are totally different. Such conditions are comprised in the following category :—

A. Parasitic and Contagious Conditions and Chronic Diseases of the Skin.

1. Ringworm.
2. Favus.
3. Scabies or Itch.
4. Verminous conditions—lice and nits.
5. Impetigo and Eczema.

[1] The Board of Education, however, appears to be favourably disposed towards schemes for the treatment of minor ailments by the school nurse. Circular 596 says:—'So far as the school nurse is engaged in treating the minor ailments, or in visiting the children's homes for purposes of advice, her employment would require sanction as an "arrangement" for attending to the health and physical condition of the children. The Board would usually have no difficulty in sanctioning any well considered scheme for this purpose.'

B. Dental Conditions.
   1. Extraction.
   2. Filling of Defective Teeth.

C. Defective Vision.
   1. Exact examination and diagnosis.
   2. Retinoscopy.
   3. Fitting of Glasses.

D. Chronic Diseases of the Eye, Ear, and Nose.
   1. Eye. Inflammation of the lids, conjunctivitis, corneal ulceration, ophthalmia, &c.
   2. Ear. Otorrhœa or discharging ears.
   3. Nasal obstruction, mouth-breathing.

E. Other Chronic and Neglected Conditions.
   1. Tubercular Bone Affections.
   2. Infantile Paralysis.
   3. Rickety Deformities.

For present purposes, consideration may well be limited to these few special conditions, which are all of the utmost importance to the school child and to the school authority. Ringworm plays havoc with the child's attendance at school, dental disease undermines his physical condition, defective vision may retard his educational progress, crippling—the result of neglected or inadequately-treated bone disease—or deafness may handicap him not only at school but also in after-life, if indeed his term of life is not actually cut short.

It is useless to discuss the means by which these chronic conditions may be remedied, until the circumstances under which they arise are clearly understood. Are these conditions accidental, incidental, or the result of neglect? In other words, is chronic disease an acci-

dent, an incident, or a crime? This question, again, can only be answered when the nature of the various diseases has been ascertained. Their clinical aspect is discussed elsewhere. In this chapter they are treated from the general and from the educational point of view.

Ringworm is a common disease of childhood and exceedingly contagious, being due to a highly resistant vegetable fungus affecting either the scalp or other parts of the skin. It is very tedious and difficult to cure, but is not necessarily the result of dirt or neglect, as children from cleanly homes are also liable to the disease. All affected children must be excluded from school, thereby losing enormously through non-attendance. Although the disease can sometimes be recognized by teachers, exclusion should not be enforced until the child has been seen by the school nurse, and, if necessary, stumps of hair have been examined under the microscope. It might be permissible for children to remain at school if strict precautions were taken, and an adequate covering or cap were constantly worn. Early cases can sometimes be cured as follows :—

1. Cut the hair short and shave the scalp for at least half an inch round the affected part.

2. Apply strong ointment or other antiseptic night and morning, washing off the old crusts and the ointment with spirit and ether lotion before every fresh application.

3. Continue this treatment for several weeks.

Coster's paint may be used as an alternative. This

is left on for a week and the whole of the affected epidermis peels off with it.

It is, however, in very few homes that the mother takes the trouble to carry out instructions. Nor are the majority of cases cured under many months, even when receiving constant skilled treatment. The average stay at the Metropolitan Asylums Board Ringworm Schools was a year and seven months, 28 per cent. stayed over two years, and 15 per cent. over three. The net result is that the loss of attendance as far as the children are concerned is enormous, and the loss of grant to the educational authorities correspondingly great. Thus, 'twelve schools taken at random in various parts of London lost 26,766 attendances through ringworm—an equivalent of the ordinary attendance of nearly 3,000 children earning a total grant of more than £5,600 per annum.'[1]

Quite apart from the neglect and poverty of many families in which the children are affected by ringworm, decent parents find very serious and real difficulty in obtaining satisfactory treatment. The following extracts from parents' letters will make this point clear :—

'I am writing to ask you if something cannot be done for the children suffering from ringworm, of which there seem to be so many. I have two, a girl and a boy; in the case of the boy, who will be thirteen in May, it is cruel he should lose so much time from school. He has always been a delicate boy, and will

[1] Report of Medical Officer (Education), London County Council, 1907.

never be able to do hard work ; therefore his education will be everything to him for his future. They are both under a good medical man, but it seems to take such a time. They have already been home about ten months.'

Another says :—' I am writing to ask if you could assist me about my little boy . . . He is nearly 10 years old, and has suffered from ringworm in the head for the last three years, and has been away from school a great deal in consequence. About a year ago it seemed to get better, and he was able to go back to school, but three months ago it came bad again, and as I have three other children (two girls with long hair) I am anxious in case they also will catch it. So if you could help me in any way, I would feel greatly obliged. I forgot to say that I could afford to pay five shillings a week for him.'

Experience has shown that the majority of chronic and almost incurable cases of ringworm can be cured after a single application of the Röntgen rays—or after two or three sittings which may vary from five to twenty minutes each—sufficient to ensure complete depilation. This method of treatment, though costly for the few, is relatively inexpensive for general use. It should therefore be made more accessible for the children not only of the poor and neglectful but also of the careful and well-to-do.

With reference to this matter in an official memorandum (Circular 576) the Board of Education says :—' In controlling ringworm, it has been open to a Committee

(*a*) to neglect the disease altogether; (*b*) to adopt a policy of exclusion from school of affected children; or (*c*) to supervise or carry out some method of amelioration. Up to the present many authorities have followed the first course. It is intended that in future they should, according to their abilities, adopt the third.' The reason why education committees have neglected ringworm is that by so doing, they secured a more substantial grant for efficiency from the Board of Education itself, thanks to the abolition of the epidemic grant.[1]

On the other hand, during recent years the establishment of special ringworm schools has been contemplated. But such an undertaking as the institution of Röntgen rays for treatment would anticipate the necessity for these schools; at least the classes need only be of a temporary nature during such time as the children were attending a centre for treatment and were awaiting the regrowth of their hair.

Favus is also due to a resistant vegetable fungus, but is more chronic and more difficult to cure than ringworm. It is possibly less contagious, and its occurrence is much more limited. It appears chiefly to affect the lowest classes of the alien population whose children live in wretched and overcrowded homes amidst dirty surroundings. In London, for instance, it is for the most part confined to the Jewish quarter in Whitechapel, where it has been possible to establish a special favus school in which eighty children are

[1] Cf. chap. ii, p. 22.

kept under sanitary and preventive treatment without losing any educational advantages. It is common also in the poorer districts of Glasgow, and it is not unknown in the rural districts of England. The essential point is that affected children, whether in attendance at special schools or not, should be submitted to a daily sanitary routine of disinfection and also to treatment by the Röntgen rays, and this is only possible at special centres.

Verminous Conditions are commonly found amongst school children of all classes. Those from the poorest quarters of large towns are specially infected with body lice, but head lice are more common. At least one-half of the elementary school population have been infected at some time or other—a disgrace to our civilization. Nor does it seem credible that any of H.M.'s Inspectors could pass a school as satisfactory and efficient in which more than half the children were verminous. Among boys the problem is not so serious, as their hair may be cut short and their heads cleansed without much trouble, but in the case of girls there is a serious difficulty. This problem has already been considered in detail in connexion with the work of the school nurse. And though it may be argued that it devolves on the parents to cleanse their children's heads, and that no expense should be borne by the municipality for this object, yet, generally speaking, it will be convenient for the education authority to make some kind of provision for treating a certain number of verminous children with sore heads and

enlarged glands on the same lines as other contagious diseases. Moreover, the Children Act, which comes into force in April, 1909, places upon the education authority the responsibility of detecting and cleansing children suffering from verminous conditions.[1]

Scabies, or Itch, can readily be cured by application of sulphur ointment and by sulphur baths, and can, as a rule, be left to existing agencies, if only parents and doctors are induced to take a serious view of their responsibilities.

Defective Teeth. The dental condition of children attending elementary schools is altogether unsatisfactory, and the more carefully the children are examined the greater the amount of disease and destruction which becomes apparent. There are no exact figures on a large scale available in England, but the British Dental Association found that out of 10,517 children examined between 1890 and 1897, only 14 per cent. had sound teeth, while the remaining 86 per cent. showed definite signs of decay. Similarly out of 10,000 children examined in Strasburg, only 4·3 per cent. had sound teeth. The further examination of 150,000 children in Germany showed no better results. These figures have also been confirmed in London by the examination of children in selected schools, and Dr. Kerr reports that at least 50 per cent. have caries to a serious extent, and that nearly half of these (25 per cent.) are in urgent need of treatment, and that 10 per cent. actually showed evidence of alveolar abscesses or of suppuration. In

[1] Cf. chap. xiii, p. 200.

other words, about 200,000 children attending the elementary schools in London are in urgent need of active remedial treatment, while examination and preventive treatment should be extended to another 200,000 with as little delay as possible.

Extensive dental disease of this nature gives rise to a fœtid condition of the mouth through constant absorption of poisonous material, and leads to consequent impairment of physique and general health. The importance of attending to the milk teeth is not generally recognized, because it is difficult for the general public to realize how a carious milk-tooth influences the growth and development of its successor. But this point is well established, and attention must be directed to improving the dental condition of infants as well as of older children. In fact dental caries is essentially a disease of childhood and adolescence, and if only a child's mouth is set in order while at school there will seldom be urgent necessity for much interference in after life. Children at all ages should be taught the necessity of cleanliness. Their teeth should be examined, and opportunities for treatment should be brought within reach of all so as to check an easily preventable source of misery and inefficiency in later life.

Regular inspection of the teeth has taken place in Brussels since 1875 and also in Germany at Strasburg, Darmstadt, Wiesbaden, and Mülhausen, and more recently in New York, but experience shows that inspection and instruction are useless unless followed

by practical measures. Most of the children are neglected if left to private enterprise. Practical steps must be taken to enforce the discipline of cleansing the teeth, as has been undertaken at certain schools by the institution of tooth-brush clubs and tooth-brush drills. But arrangements must also be made for remedial treatment which consists partly in extractions and in cleansing the mouth, but more particularly in filling the diseased teeth and in other conservative methods. Cambridge, following the example of Strasburg, has taken the first step in this direction in England.

Defective Vision. Statistics relating to defective eyesight among school children have been collected abundantly. The problem has been brought very prominently before the notice of the general public. In 1866–7 Cohn of Breslau was the first to examine the vision of 10,000 school children in Germany. Dr. Kerr reported upon the visual acuity of 50,000 children in Bradford in 1894, and two years later Dr. Brudenell Carter conducted an examination in London. In 1898 a series of voluntary investigations were carried out throughout England on behalf of the Board of Education, but the results have been pigeonholed ever since. The general outcome, however, is that about 20 per cent. of children of school age are known to be suffering from defective vision and to be in need not only of more detailed examination than is possible in the schoolroom but also of remedial treatment.

The whole matter is so notorious that almost every

medical officer newly appointed by a local education authority has made it his first duty to go over the same ground and to rediscover the fact that about 20 per cent. of the children in his district are suffering from defective vision. Still an overwhelming majority remains untreated. In London and other populous districts not more than one-third of those who are defective, and whose defects are reported to their parents, seek any kind of advice. Fewer still procure the necessary glasses.

There are also a considerable number of children in the infant schools suffering from squint whose vision may be normal, but who require the use of glasses from an early age in order to prevent disuse of the squinting eye. Very few at present actually obtain glasses.

The outstanding facts are :—

1. That less than half the children attending city schools could pass so severe a test as perfect vision with both eyes.

2. That, to supplement the rough testing of the visual acuity of all children by teachers or school doctors, not less than 20 per cent. require routine examination by a qualified ophthalmic surgeon in a specially equipped room. But such routine examination is tedious and uncongenial to the general practitioner or voluntary hospital worker.

3. That in a large number of these cases occurrence may be prevented and deterioration avoided by improved construction and lighting of schoolrooms, by

improved educational methods, and by more personal instruction and supervision of the children.

4. That of these children approximately one half (i. e. 10 per cent. of all school children) urgently require spectacles, while in the absence of spectacles a certain proportion are seriously handicapped in their educational progress and in after-life.

5. That the defects, even when reported to the parents, are actually remedied in only an infinitesimal proportion of the cases.

6. And that this last fact is due partly to the ignorance and apathy of the parents, partly to the inconvenience and difficulty of obtaining treatment, and largely to the expense of procuring glasses.

It was owing to the excessive cost of spectacles in London that a voluntary association was founded in 1906 for the supply of cheaper spectacles to school children, but though this association has undoubtedly brought spectacles within the reach of most of the poorer parents by effecting an enormous reduction in the price, yet it has by no means solved the problem of securing efficient treatment for all those who need it.

Chronic Diseases of the Eye include such defects as inflamed eyelids, chronic ulceration of the cornea, conjunctivitis and ophthalmia. Many of these are considered by the parents to be trivial complaints until permanent injury has been caused, and although parents are repeatedly urged by the teachers and school doctors to seek advice, nothing is done. Moreover, owing to the contagious nature of certain forms

of purulent conjunctivitis—familiarly known as 'blight' —and more rarely of trachoma, the children are excluded from school; and, in consequence of much unnecessary delay in the treatment of these cases, there is considerable risk of spread of infection as well as loss of attendance. Thus these conditions, when untreated, are serious as affecting the physical condition, school attendance and after-life of the child. The majority of such cases should be seen by a medical officer or a trained nurse daily until they are cured, and this seems difficult to attain except by special provision.

Chronic Ear Disease. The worst example of the inadequacy of treatment and of neglect by parents is to be found in otorrhœa (discharging ears), which often originates in adenoids and frequently leads to permanent deafness and educational backwardness besides proving a handicap in after-life—to say nothing of the constant danger of extension of the disease to the cranial cavity with risks of meningitis. The percentage of children who urgently require treatment is probably not more than 2 or 3 per cent. But here again either the parents do not seek advice, or the remedial treatment undertaken by hospitals and local practitioners is quite inadequate to the requirements of the case. Many cases go on and on for months and years. Sometimes the children are excluded from school on account of the offensive nature of discharge. A case of chronic ear discharge requires skilled attention daily, often syringing two or three times a day, which cannot, in most instances, be undertaken in a satisfactory way

by the parents; and, for obvious reasons, these cases do not receive adequate attention at hospitals or from general practitioners.

In the same way there seems to be general laxity as regards the treatment of chronic affections of the skin and scalp, such as impetigo and eczema. Often the children become unsightly and lose much school attendance for the want of a little daily supervision and medical treatment.

Other Chronic Conditions. Many of the children suffering from old infantile paralysis, from deformities and tuberculosis of bones remain insufficiently treated either through parental neglect or through the impracticability of proper hospital treatment. In fact it is almost impossible for a large proportion of tubercular children among the poor to obtain the prolonged treatment necessary for complete recovery, and this notwithstanding the considerable number of cases which are dealt with by the Invalid Children's Aid Association, and similar organizations.[1]

These, then, are the chronic diseases of childhood which urgently demand immediate treatment. In the future it is to be hoped that prevention instead of cure will be the aim, that being the ideal to keep in view. In the meantime there is to be considered the appalling

[1] These children, and many of those suffering from heart disease, require prolonged treatment in bed. They are possibly outside the purview of the education authority, unless, owing to the general neglect of these conditions, the latter takes upon itself to establish convalescent schools in the country.

number of children in the elementary schools of the great cities suffering from remediable conditions, the majority of which remain untreated. Consequently there has been an outcry. The general feeling is that 'something must be done', and that child life is too valuable to be thus wantonly sacrificed. It was reasonable to expect that the parents, after receiving notice of their children's defects, would do their part towards treating them. But these expectations have not been realised. The story is repeated on all sides —'Nothing is done'. What then is the ultimate cause of inaction?

It will be well at first to confine attention to the needs of large towns and populous centres. The existing means for securing treatment are :—

1. The family doctor. He is the obvious agent and the best man to carry out treatment, but unfortunately the family doctor does not exist for the homes of the poor. The doctor's bill does not appear as an item in the ordinary working-man's budget, nor can the necessary margin for it be easily provided—when a large family must be kept on 25*s.* a week, with 6*s.* or more to go for rent. The causes for this may be manifold, but doubtless one may be found in the pauperization of the poor by hospitals and other charitable institutions. But consider the case of those who, being placed a little higher in the social scale, prefer the family doctor to the hospital, or at least attend a provident dispensary. What is so inadequately paid a doctor to do for a child with discharging ears or with defective vision?

He gives advice which, for a multitude of reasons, is not followed. In fact, the majority of general practitioners in poor districts make no pretence to cure discharging ears, or to prescribe glasses. It is unreasonable to expect any one of them to do more for 1*s.* or 6*d.* than to give a bottle of medicine and advice. He may be admirable in dealing with acute diseases, but so far as chronic conditions are concerned, he is paid to treat symptoms, and he does so. Anything more is a labour of love, the work of a philanthropist.

In Switzerland the state of affairs is totally different. Nearly all the working-class families employ a family doctor, who is prepared to treat chronic, as well as acute, diseases, and who has no hesitation in referring special cases to the recognized specialists of the district. The remainder take their children to the dispensaries or polyclinics—which are simply hospital out-patient departments—immediately after receiving advice from the school doctors. But Switzerland has several distinct advantages over this country. The general level of education among the poorer classes is much higher. The populations of the towns and communities are smaller, thereby increasing the communal *esprit de corps*. There also appears to be little tendency to the pauperization of the poor by charitable relief.

The result is, that 90 per cent. or more of the children who are reported to have physical defects actually obtain definite and proper medical treatment—excepting of course as regards teeth, for the treatment of which public provision is now being made.

2. Secondly, there are the casualty and out-patient departments of the larger public hospitals. These must naturally be regarded as appointed places for securing efficient medical treatment for the children. But, in London at all events, and in New York, and doubtless in other large cities, the majority of the parents do not take their children to the hospitals for the specified chronic complaints; while many of those that do attend are not satisfactorily treated. Moreover, Education Committees continually receive serious complaints from the hospitals and appeals for help. Thus, one hospital reports that 'the examination of these children prevents many patients who require more urgent treatment from being seen by the ophthalmic surgeon'. Another says, 'this difficulty is now becoming very acute'. Another, 'it is really intolerable'. Even one of the children's hospitals complains of the 'large batches of children who attend the out-patient departments'. And yet not half the children have presented themselves for treatment.

It would appear, therefore, that hospitals are unsuitable for the treatment of the chronic complaints of school children for the following reasons :—

(*a*) The number of the children requiring treatment is too overwhelming.

(*b*) The cases which have been indicated are of too chronic a character, and the treatment is too tedious for voluntary workers.

(*c*) The central hospitals are quite inaccessible to the people living in outlying districts, on account partly of the expense, and partly of the distance.

(*d*) The inordinate length of time during which out-patients are kept waiting at most of the hospitals is a very serious consideration to those working-class parents who must accompany their children.

(*e*) Such gratuitous hospital treatment is an unjust tax on the medical profession.

If any parents desire to take their children to the hospitals and the hospitals are willing to treat them, the school authorities would make no protest, provided that they are in a position to insist upon efficient treatment of chronic conditions, which is scarcely attainable at the great London hospitals.[1]

3. Poor Law Dispensaries. It is often urged that if parents are too poor to pay for medical attention, and if the hospitals are unwilling to provide treatment, the patients must have recourse, through the relieving officer, to the Poor Law.[2] But what provision does the Poor Law make for the cases under consideration ? The cases are not suitable for admission to the infirmaries ; they are essentially cases for out-patient treatment. But, for practical purposes, no out-patient

[1] It is generally thought that hospitals exist solely 'for the relief of the sick poor'. But this term has become a mere phrase on which a hospital depends for its appeal to the charity of its supporters. If the bare truth is to be stated, the great hospitals, both in London and in the provinces, with their medical schools, exist:—partly for the treatment of accidents and emergencies, partly for the relief of the sick poor, partly for the relief of the sick who are not poor; but chiefly for the advancement of medical education.

[2] Thus a correspondent in *The Times* writes epigrammatically: 'The medical treatment of school children who need it is the business of the parents when they can pay and of the Poor Law when they are unable to do so.' See also *post*, p. 234.

department exists. The parish doctors attend daily at a dispensary: they admit some patients to the infirmary, they order medicine for others, apply a few dressings and undertake to visit a few patients in their homes. But there is no accommodation or convenience for testing errors of refraction, for the daily syringing of discharging ears, for the application of X-rays to ringworm cases, or for attending to the teeth of the children.

Every one who has any knowledge of the routine and administration of these institutions will realize that they are wholly unsuitable for the treatment of school children; nor is it reasonable that school children should thus be branded with the stigma of pauperism.

It remains now to consider what steps are to be taken to solve the problem. There is no single root evil; the problem is highly complex; and upon analysis may be resolved into the following factors :—

1. The ignorance, apathy, and neglect of parents.
2. The inadequacy and inaccessibility of existing institutions.
3. The real poverty of the people and their inability to pay for efficient treatment.
4. The tedious nature of the treatment required for the specified chronic cases.
5. The general standing of the practitioners in poor districts.

In connexion with the last factor it is remarkable that, in certain matters affecting the public health, many members of the medical profession appear quite devoid

of conscientiousness. They constantly certify children as free from infectious and contagious disease, and as fit to attend school, when they are obviously suffering from ringworm or scabies; and sometimes even in the case of diphtheria their action is not beyond suspicion. For example, out of 240 certificates of freedom from ringworm, no less than 234 were proved to be inaccurate on microscopic examination of specimens from the affected cases.[1]

In short, from a variety of causes, a decent and respectable parent often has the utmost difficulty in obtaining the cure of his children's chronic complaints. Everything must be undertaken with the maximum amount of trouble and inconvenience, and it is only natural to expect that apathy and neglect should be the rule among the less intelligent of the poor.

What, then, is to be the solution of the problem ?

Four separate answers to this question may be distinguished. The first advocates a policy of *laissez-faire*. The second and third consist in alternative schemes for the reorganization either of the hospitals or of the Poor Law system. The fourth urges the municipalization of medical services.

Briefly to summarize the various positions :—

(*a*) The first contention emphasizes the obvious danger of tampering with parental responsibilities by the establishment of a system of State-provided medical treatment, and lays special stress on the fact that all

[1] Cf. also chap. ix, p. 118.

progress and reform are the work of time. The strength of the people lies in the family. But, it is urged, the tendency of all recent philanthropic effort is to weaken family ties. If compulsory education is to lead by way of medical inspection to compulsory treatment, there is no logical stopping-point. Even now the child looks less and less to his family, and more and more to outside agencies, to provide for his most elementary needs. On the other hand, there is no short cut to social reform. It is mere folly to disregard the part played by lapse of time or by general social evolution. One generation has already passed while parents were becoming familiarized with the idea of compulsory school attendance. In the course of another thirty years they will have realized their responsibility for providing medical treatment, and allowance for this item will appear in the budget of every working-class family. During the same interval, hospital administration will have undergone processes of reform and readjustment. The medical profession will have adapted itself to the altered requirements, and every general practitioner will be ready to prevent the very diseases which the specialist is now only seeking to cure.

The validity of this position is at least open to question. It would require an army of keen social workers and greatly improved methods of education to effect such a change in any large city. It may be the ideal course, and there is no doubt plausibility in the argument. Short cuts to social reform are always

difficult. But quite apart from sentimentalism, it is false economy to allow these chronic conditions to go untreated for twenty or thirty years for want of a little foresight and some public-spirited policy.

(*b*) The second contention admits that at the present time the majority of parents have few facilities for obtaining treatment. But, the argument continues, if, by careful adjustment and organization between hospitals and school authorities, such facilities could be arranged, then perhaps neglectful parents might be summoned for not obtaining treatment, and the onus of proving their inability to do so would then devolve upon them. For instance, in provincial towns, by careful reorganization, it might be possible for the local hospital to arrange special hours for school children to be examined for defective vision, and special hours for the syringing of discharging ears, and for the treatment of ringworm. In London, special inquiry was undertaken with a view to ascertaining the practicability of such a scheme. The general conclusion was that no satisfactory arrangements could be made.

Two plans, however, have been suggested : (1) that the municipality should contribute to the funds of selected hospitals and should have the right to send batches of children at certain hours for specified treatment ; or (2) that the hospitals should lease their special accommodation and equipment to the municipality at fixed hours for the treatment of school children by special doctors and nurses paid by the municipality.

On the contrary it might be urged that neither of these schemes goes to the root of the matter, in that the ultimate arrangements are not under the control of the education authority. The first would, moreover, necessitate complete reorganization of the staff, routine and *raison d'être* of the hospitals, and in the second there would be insurmountable difficulties and friction. In other words, as far as the requirements of large cities are concerned, these schemes are neither practicable nor desirable.

Schemes of this nature, however, might be adopted in small towns and at hospitals without medical schools, and the idea has already met with official approval in the following terms: 'The Board (of Education) will be prepared to entertain proposals for contributing to the funds of hospitals, dispensaries, and nursing associations on terms of adequate advantage. Such contributions are specially desirable in the case of eye hospitals and cottage hospitals, which are prepared to undertake minor surgical operations.' The principle, however, has been condemned by the British Medical Association.

(*c*) The third proposal suggests the possibility of inaugurating modern up-to-date dispensaries in connexion with the Poor Law Unions. There would be one for each district. The expense would be enormous, and great reorganization and extension of Poor Law methods would be necessitated and special provision would be required for dealing with the problems of

school life. For it is essential that medical relief should be given without any stigma of pauperism: and even if two days a week were set apart for the treatment of school children, the school authorities would not have the necessary and complete control to secure efficiency. Moreover, in all probability many difficulties of administration would arise.

The neglect to deal specifically with the question of the medical treatment of school children constitutes a serious omission in the Report of the Royal Commission on the Poor Laws, 1909. There are recommendations for the reorganization of the Poor Law, and for the better administration of educational as well as of public health problems; but this subject—the medical treatment of school children—stands apart and has so far not been sufficiently recognized. No Public Assistance Authority or Committee can provide, out of existing institutions, adequate facilities for the treatment of the specified chronic diseases of school children.

One of the recommendations of the Minority Report, however, may be regarded as covering the omission. This recommendation is: 'that the local educational authority should be given sole charge of all children in need of any form of public assistance'.

(*d*) The final contention is concerned with the complete municipalization of the medical services. Whatever the future may have in store, the time is certainly not ripe for the introduction of such a sweeping reform.

The suggestion is not within the scope of practical politics. Any complete system of State or municipal medical service should from the first be satisfactorily organized and should be administered on a sound and systematic basis. It is not sufficient for the State or for the municipality to subsidize, out of public funds, the hospitals and charitable institutions so as to entitle persons or children under the care of the State or of the municipality to claim the gratuitous services of hospitals.

Under any such scheme the general practitioners themselves must be subsidized and paid out of public funds as, to take an instance, at Bellinzona in Switzerland. There the town was divided into medical districts and the inhabitants paid a small tax for medical service. But shortly after the scheme was instituted, fifty-three out of the fifty-five practitioners 'went out on strike'.

The inevitable conclusion of this chapter is that, although the principle of establishing some means for the medical treatment of the chronic diseases of school children is essential to the physical and educational well-being of the community, yet no one of the suggested schemes is either satisfactory or adequate.

CHAPTER XV

THE SCHOOL CLINIC

The Serious and Urgent Problem Still Unsolved.—The Only Solution.—The School Clinic Defined.—Report of Sub-Committee of London County Council.—General Principles.—Building and Equipment.—An Example from Cambridge.—Staff, Service and Routine.—Proposed Methods.—Treatment of Ringworm by X-rays.—The School Clinic at Bradford.—Cost.—Initial Outlay and Annual Expenditure.—Organization in Towns, Small and Great.—Medical Treatment in Rural Districts.—The 'Flying' Clinic.—Summary of Advantages and Objections.

A CONSIDERATION of the facts cited in the previous chapter leads only to one conclusion. There is a serious and urgent problem. More than 50 per cent. of defective children in crowded centres do not receive medical treatment. Nor is there any immediate prospect of getting them treated. None of the suggested remedies is satisfactory or adequate.

There remains, then, as the only solution, the establishment of central school clinics in populous districts for the treatment of the more chronic complaints of children of school age. Such a clinic should be under the direction and control of the education authority, so that it might be conducted with as little interference as possible with school routine.

A school clinic in its ideal form is a small building containing five or six rooms used as a centre for the

medical examination and treatment of school children suffering from certain specified chronic complaints. It should be modelled partly on the lines of the special clinics which have been established at Strasburg, Dresden, Mülhausen, and many other German towns, and at Bâle, Lucerne, Zürich, Helsingfors, and Stockholm, for the treatment of teeth, and partly on the lines of the general school 'polyclinics' which have been established in Switzerland at Lucerne and La Chaux-de-fonds. These latter exist chiefly as consulting-rooms for the school doctor, and only secondarily for the treatment of a few parasitic and minor affections.

The movement is only in its infancy. On the continent of Europe there does not appear to be the same urgent need for public medical treatment except in the case of teeth, seeing that there is an adequate number of family doctors, as also in every town specialists for the eye and ear. But in England the circumstances, as it was indicated in the last chapter, are totally different. Therefore, we must not be content with merely following the lead of other countries, but should strike out a path for ourselves as soon as the need is shown to exist.

This matter has received special consideration in London. A special Sub-Committee of the London County Council Education Committee was appointed in July, 1907, and reported in December, 1908. The committee, which was composed of educationalists, medical practitioners and consultants, governors of hospitals, and representatives of the Charity Organiza-

tion Society, and other bodies, was required by its terms of reference to make inquiries upon the following points :

(i) What is the existing provision for the medical treatment of school children ?

(ii) To what extent can this provision be rendered more available by the action (*a*) of the hospitals, (*b*) of the Council ?

(iii) What additional provision, if any, is desirable ?

(iv) How should this provision be supplied ?

The Committee instituted special inquiries among hospitals, dispensaries, Poor Law institutions, and voluntary associations, and took certain expert evidence. The children requiring medical treatment were divided into three groups :—

A. Those requiring care in an institution and outdoor life, i.e. debilitated children ; children convalescent from tuberculosis treated surgically ; children suffering from subacute or early tubercular disease.

B. Those requiring operative and in-patient treatment.

C. Those who can be promptly and adequately dealt with in suitably equipped rooms, e.g. children suffering from teeth defects and simple diseases, eye defects and simple diseases, skin diseases (chiefly parasitic, ringworm, scabies, and pediculosis), ear defects and simple diseases.

Eventually the Committee considered two distinct propositions :—

1. That the Council should make arrangements with the existing hospitals and dispensaries.

2. That the Council should establish school surgeries or clinics at which treatment should be provided by its own medical officers.

On the grounds of efficiency and economy the Committee recommended :—

(*a*) That, as the existing provision of private and hospital practice sufficiently meets the requirements in the case of children requiring operative and in-patient treatment (who are thus removed from the direct purview of the educational authority), no further steps be taken in respect of this class.

(*b*) That the Council should establish school clinics at suitable centres in the metropolis for the medical treatment of the defects included in group C.

A school clinic has other advantages. In addition to being a centre for medical treatment it serves as a convenient place for the examination of children on and after admission, in the absence of a satisfactory room for conducting such an examination in the school. There would be better accommodation for the work of the school nurse in connexion with parasitic and contagious diseases. Moreover, the absences from school of children under medical treatment would be under more systematic control than at the present time. There would be less interference with school routine and greater co-operation would result between the school doctor, the nurse, and the attendance officer. Finally, the general simplicity and uniformity of the system offers peculiar advantages.

Attendance at the clinic should be entirely voluntary

and all treatment gratuitous. Those who prefer may attend a private doctor ; others may go to the hospital : but school authorities must be in a position to insist upon the parents obtaining efficient treatment for their children. So much for general principles.

Building and Equipment. A model school clinic should consist of five or six rooms, a large central waiting hall and dispensary to accommodate 50 to 100 children with teachers or parents, two consulting rooms, one being for the use of the surgeon or physician, and one for the dentist, one dark room with special apparatus for examining eyes, ears, throat, &c., one room for dental and other operations, and one private room for the nurse. Hot and cold water should be laid on in all the rooms, and there should be adequate lavatory, w.c. and sink accommodation.

The rooms should be constructed upon the lines of a miniature, but modern and up-to-date out-patient department at a hospital, and should be airy and well lighted and should communicate one with another.

The physician's consulting-room would be used for the visiting physician or surgeon to examine all except dental cases, and arrangements would be made for children to be seen in different batches. This room should be equipped with a table or desk, three or four chairs, a couch, washing-basin, sink, screen and cupboards. There should be cases of instruments for the ophthalmic, aural, and throat surgeons, and also a series of lenses for testing errors of refraction ; and other instruments for general work, such as spatulas, forceps,

&c., a movable dressing stand, dressing basins, and trays.

The Dentist's Consulting-room should be fitted up in a similar manner with special dental equipment.

The school dentistry at Cambridge, under the direction of Dr. Cunningham, consists of two rooms—a waiting-room containing rocking-horses, chalks, and blackboard, and other toys for the diversion of the children. The surgery itself is a pleasant room facing an open garden, and few parents have objected to sending their children for treatment. Only nine of the first 700 children treated proved intractable, and only fifteen failed to return when told to do so. Extractions are not performed at the clinic, but at the neighbouring hospital.

It is estimated that one dentist giving his whole time could treat about 1,000 children in the course of a year. Attendance at the school dentistry counts as school attendance. Three children are sent at nine o'clock and three more at ten o'clock. One surgery maid is suggested as a sufficient help for two dentists. The complete equipment of a room in any ordinary house would prove satisfactory and should not cost more than £40 or £50.

The Operating-room should be situated between the two consulting-rooms and communicate with both. In addition to the usual equipment there should be a sterilizer in which the instruments might be boiled. This room would be used almost entirely for dental surgery and might possibly be combined with the

dentist's consulting-room, so as to economize space, as is the case in the school dentistry at Strasburg.

But generally two dental operating-rooms would be required if there are to be a large number of assistants. At any rate the dentist would need the service of a second room for the use of the children after operation —a spitting-room (Spühl Zimmer).

In addition, a small room, capable of being darkened, must be available for X-ray work for ringworm, retinoscopy, and other examinations. It would be fitted up with electric lamps and other modern conveniences.

Any one of the rooms (which was not in use at the time) could be used for the nurse to do her dressings, to examine children for ringworm and skin disease, and to syringe discharging ears, &c.

The waiting-room should be spacious. Probably in populous centres batches of fifty children would attend at once. In a corner of the waiting-room a small dispensary would be fitted up containing a small stock of simple drugs, lotions, liniments, ointments, dressings, &c., for use in the department.

Staff, Service and Routine

In a large town or city the staff of each clinic would consist at least of one oculist, one general physician, one dentist, one X-ray specialist. It is probable that even in the smaller towns several assistant dental surgeons would be necessary.

This staff of visiting specialists should, generally speaking, be quite distinct from the staff of school doctors appointed to carry out medical inspection or other work in the schools. But they should for the most part be selected from medical men, either general practitioners or consultants, who had already gained experience as school doctors. Each member of the staff would be appointed for special knowledge of some particular branch of the work, and would only devote a few hours each week to his duties. Thus the appointments would rank as equal, in public esteem and importance, to those of physicians or surgeons visiting special hospitals ; and would be even more acceptable to younger men in that adequate salaries would be attached to the posts. The fact that the staff of the school clinic differed from the staff of school doctors and medical inspectors, ensures a double check and prevents any danger of carelessness on the part of municipal officers.

A trained nurse should have charge of the whole building and equipment under the direction of the responsible medical officer of the education authority. She would probably require the services of an under-nurse to help with the dressings, instruments, and operations, and with keeping the ledgers and records. One of the nurses would also have to make herself proficient in the use of the X-ray apparatus. One attendant would be necessary for scrubbing and keeping the place clean.

The exact method of service depends upon local

conditions and requirements. There are three methods which may be mentioned here :—

According to the first, which is sufficient for the smaller towns, the nurse is present early every morning attending to all the children with discharging ears who have been referred by the school doctor, sending them back to their own schools immediately or else directing them to a neighbouring school where a special class has been temporarily arranged for all such children ; they attend again in the evening. Then the nurse proceeds to deal with a similar series of verminous or parasitic children, and so on through the morning. In the afternoon the nurse might visit the schools or the homes so that her routine work should not become too monotonous.

At the close of afternoon school the visiting physician attends and prescribes treatment for all children bringing cards from the school doctor. He either examines them for defective vision, or directs the nurse who is also in attendance, to do what is necessary. In a small country town such work should not occupy more than an hour each day. Meanwhile the dental surgeon has attended to the slighter cases, reserving those cases which require the assistance of a second medical man until the physician is free to come to his aid. Both should finish their work at the end of the second hour. This method might be followed five or six days a week, and scarcely interferes with school routine. Such a system has been adopted at Lucerne—a town with a population of about 30,000 inhabitants.

According to the second method, the children who require daily treatment by the nurse attend at the commencement of morning school. But later in the morning the oculist arrives and examines a batch of fifteen or twenty children who have been referred on account of defective vision. First he examines them and puts drops of homatropin in all their eyes, then he inspects, for instance, a number of the children who are undergoing X-ray treatment for ringworm or any cases of otorrhœa which the nurse has kept back for advice. Then he returns to the children with defective vision, whose pupils in the meantime will have become dilated, and takes them one by one and does retinoscopy. Subsequently those who require glasses are measured for frames, and the prescription given to an optician. The same batch of children attends a week later to be fitted with glasses, for which cost price should be paid. Experience shows that purely academic corrections of refraction errors by means of expensive glasses are needless, and that for practical purposes school children are equally benefited by this rapid and ready method of treatment, while the economic saving in the price of glasses is enormous.[1] In marked cases of astigmatism, cylindrical glasses would be ordered.

These children thus only miss two school sessions,

[1] The Association for the Supply of Spectacles in London Elementary Schools has done a great work in effecting a reduction in the price of spectacles. Spherical lenses can now be obtained for 1*s.* 9*d.*, and cylindrical lenses for 2*s.* 9*d.*, 3*s.* 9*d.* or 4*s.* 6*d.* In Bradford the price is 1*s.* 5*d.* for sphericals, 2*s.* for cylinders, and 2*s.* 9*d.* for spherocylinders.

and, if their parents are not altogether poverty-stricken they are fitted with glasses without any further inconvenience or trouble to the families.

A second oculist attends in the afternoon to deal with another batch of twenty children from a different school

Meanwhile in another part of the building the dentist and his assistants have been attending to one or two batches of children with defective teeth. These have previously been examined in the school by the school doctor or by one of the assistant dentists, and referred to the clinic for treatment. They are treated either by extraction or by conservative methods, and after two or three visits are finished with for the time, and need not be seen again until sent by the school doctor. Similarly with the next batch.

The X-ray specialist possibly visits on two or three days a week and treats all the ringworm cases in turn, who are collected together and are in attendance at a special class in a neighbouring school.

With regard to the treatment of ringworm by the X-rays, there are several points to be borne in mind. Each installation of the apparatus costs about £100 or less. It can readily be worked by an attendant under the supervision of a medical man. The expense of outlay is relatively great for the treatment of a few individual cases, but when the apparatus is in constant use, the cost of each treatment is relatively small. Economy would also be effected by the installation of two apparatus, both of which could be used simultaneously under the supervision of one

medical man. Each application of the rays for the treatment of ringworm occupies on an average five to twenty minutes, and if the whole head requires treatment, as is commonly the case in young children, approximately eight such applications are necessary. Such prolonged treatment should not, as a rule, be undertaken at a single sitting. Generally speaking, one application causes complete depilation of the part treated and effects a cure. The children, however, should be subsequently kept under medical supervision. And as they are unable to return to school until their hair has grown again—often a period of several months—they should be in attendance at a special class of ringworm cases in the neighbourhood of the clinic.

In the case of the large towns, or where the pressure of cases is very heavy, a throat or an aural surgeon may be examining in another room all the children who have been referred for adenoids or mouth-breathing. An exact examination can be made, minor methods of treatment may be adopted, and the children instructed in the correct use of the pocket-handkerchief and in the importance of nasal breathing. But in the case of all children requiring surgical operation, such as tonsillotomy, removal of adenoids, or mastoid operations, the parents should be interviewed and instructed as to the necessity for operation, and the children should be referred with a letter to a hospital or a private practitioner.[1] The actual number of cases requiring

[1] It is inadvisable that the municipality should undertake any re-

operation for these conditions is not so large as might be concluded from the statistics which have been collected about mouth-breathing and adenoids. Great care should be exercised by any doctor who refers cases for operation without digital exploration.

Meanwhile the nurse and her assistant would have been present giving necessary assistance, or continuing their own work of cleansing heads or syringing discharging ears.

The third method is merely a modification of the second to suit local conditions. According to this, a smaller staff with less ample accommodation could attend two days of the week for the eyes, two days a week for the teeth, and once a week for ears, throats, and general conditions, while the nurse was in attendance every day as in the other methods.

Such a scheme has been adopted in Bradford with its population of 300,000 inhabitants. Dr. Crowley, the medical superintendent of schools, writes :—

'The clinic was established at the offices of the education committee, the members of the committee being good enough to give up their "members' room" for the purpose. One or two other rooms also were available, and one of these is now being adapted for the installation of an X-ray apparatus for the treatment of ringworm.

'The clinic is open as follows :—Wednesday and

sponsibility as to operative treatment or as to the administration of anaesthetics. This opinion is endorsed by the experience of New York, where, after eighty-four children had been operated on in the space of two hours, certain complications occurred.

Saturday mornings, 9 a.m., for general purposes, especially for the drug treatment of ringworm, the treatment of sores, and of various skin diseases. Tuesday and Thursday afternoon, 2 p.m., for examination of vision and prescription of spectacles. Monday afternoon, 2 p.m., for the examination and treatment of cases of running ears, and children with this condition attend also every day at 9 a.m. or 4.30 p.m., for treatment by the school nurse. In addition, at least two afternoons per week will shortly be given to the X-ray treatment of ringworm, and it seems likely that an additional afternoon will be needed for ear cases. At the commencement of next year the committee will have under consideration the establishment of a dental clinic. It may be added that the clinic is used also for purposes of further medical examination, and children seen in the schools or who are not attending school, and who require such examination, attend any morning at 9 a.m.'

Treatment at the Bradford Clinic is undertaken by Dr. Crowley and his permanent assistants and not by specially appointed practitioners and consultants. Complicated cases are referred to the hospitals for special treatment.

The nurse, in addition to the duties which have been indicated, would be responsible for the care of instruments and equipment and would take charge of all cases referred to her by the various doctors.

Cost. It is impossible to make an exact estimate of the probable cost of school clinics, as examples from

the similar institutions in Germany and Switzerland would be misleading. Such estimates afford only a very rough guide. But the following figures from Dr. Jessen's experience in establishing the pioneer school dentistry, founded in 1902 at Strasburg, are useful as an indication of the vast amount of invaluable work which can be undertaken for a trifling outlay in a town of 150,000 inhabitants :—

Number of Children in Schools.	*Number examined.*	*Number treated.*	*Fillings.*	*Extractions.*	*Cost.*
					£ *s.* *d.*
17,119	5,343	2,666	699	2,912	137 10 0
17,054	6,900	4,967	4,832	6,530	271 10 0
18,073	4,372	6,828	7,065	7,985	335 0 0
18,607	834	7,491	8,340	8,552	427 10 0

For the year 1907 the cost was raised to £450. But the salaries are so very low that they could not be quoted for England. Thus the director and responsible medical officer himself receives no salary at all. About 4,000 children or more are treated each year by two dentists, devoting their whole time, morning and afternoon, to the work.

Professor Jessen estimates the ultimate cost to be about one mark per child treated. Higher estimates he considers to be erroneous and based solely on theoretical calculations.

Many new school dentistries have been founded in Germany during the last two years, but no exact statistics as to their cost are available. In Dresden the clinic consists of four operating-rooms with a continuous

service of ten dental surgeons. In addition there are laboratories, photograph and X-ray rooms. In Zürich, a dental clinic was established in 1908 and one dentist appointed. Properly equipped rooms and a caretaker were also provided by the municipality. In Lucerne, with a population of only 30,000 inhabitants, the authorities have combined the school dentistry with a small polyclinic, and the routine is conducted on the lines indicated in the first method, though there is no nurse.

The initial outlay for such a general school clinic as we have indicated would be considerable, but the current expenses beyond the salaries of the staff would be so small as to be almost negligible. The most satisfactory basis for the estimation of the doctors' salaries should be on the scale of £1 for a half-day session of three hours—that is £50 a year for an assistant who attends one morning or one afternoon a week. It would probably be better not to employ any assistant more than three half-days a week. On this basis the cost might be worked out thus :—

COST OF A FULLY EQUIPPED SCHOOL CLINIC FOR A TOWN OF 200,000 POPULATION.

Initial Outlay.

Cost of Building	£1,000
Cost of equipment including X-Ray installation . .	500
	£1,500

Annual Expenditure :—Salaries:

Organizer and Responsible Medical Officer (adviser of Education Committee) additional salary	£100
Oculists (6 giving 3 hours a week each) at £50 per annum	300
Dental Surgeon (chief)	100

Dental Surgeon, 12 assistants (giving 3 hours a week each) at £50 per annum	600
X-Ray and skin specialist, aural surgeon, general physicians (6 giving 3 hours a week each) at £50 per annum	300
Matron	150
Assistant Nurse	100
Attendant	50
Lighting, heating, general upkeep and other expenses	300
Total annual expenditure	£2,000

In England it would appear that every town with 20,000 children, that is, with a population of more than 100,000, requires such a school clinic as a hygienic and economic necessity. It is not unreasonable to assume that 15,000 children would require attention for their teeth, 10,000 for verminous conditions, 4,000 for defective vision, 2,000 for mouth-breathing, deafness, and discharging ears, and 1,000 for sore heads, chronic eczema, ringworm, &c. One small general clinic with the four or five rooms would be sufficient.

Smaller towns, with less than 100,000 population, could probably manage on a much smaller scale. They could follow the example of Lucerne and Neuchâtel in Switzerland, obtain the use of two or three rooms and convert them into a convenient place for the school doctor and dentist to attend to the children after school hours, while the nurse attends in the morning for her various duties. Failing this, it might be possible for the Education Committee to come to satisfactory terms with the local hospital and district nurse with a view to arranging for the treatment of children before

and after school hours.[1] But in any case other arrangements for dental conditions would necessarily have to be made, and small towns would do well to follow the example of Cambridge, where a municipal dental clinic for school children has been recently instituted.

As for the larger towns, twice the number of clinics would not be necessary for twice the population. Probably a town of 300,000 population, with 50,000 or 60,000 children, could manage with two clinics in different quarters of the town. Possibly some overlapping of the staffs might also be arranged.

Four clinics would be required for 200,000 school children, while in such a city as London, with its 800,000 children, it is probable that not less than twelve would be found to be eventually necessary. In all these cases, however, it would be well to begin with one experimental clinic and gradually to build up a scheme in accordance with local requirements.

With regard to rural districts, the establishment of school clinics is out of the question. At his visits to the school the medical inspector, be he local practitioner or travelling inspector, has advised the parents either verbally or by letter to consult their own doctor and obtain treatment or to attend a hospital, should there be one in the neighbourhood. When lapse of time shows that facilities for obtaining treatment do not exist in any particular district, then it will be necessary to adopt one of the two following schemes. But, in either case, there are many practical difficulties.

[1] See Board of Education's Circular 596, Appendix II. C., p. 325.

(*a*) Local practitioners, district nursing associations, or the village dispensary may be subsidized by the education authority for the purpose of attending to the needs of school children. Payment should be granted on a definite scale *per caput*, that is, for testing errors of refraction, for attending to discharging ears as well as for ringworm cases or other parasitic conditions. Those children who are in need of constant supervision might be transferred to a central residential school. For the time being, however, there is little prospect by this method of making arrangements in rural districts for the dental care of children.

(*b*) The other method involves the institution of 'flying clinics'—a scheme to which Professor Osler has alluded: 'Are we to look forward in each district to travelling specialists, before whom the children will be lined up—Monday the eyes, Tuesday the ears, Wednesday the teeth and so on?' This method has been established in some of the country districts in Germany for the treatment of defective teeth. In England some modification would be necessary. About a month after the school doctor's visit for the purpose of inspection, another medical man should go the round of country schools with a view to attending to the eyes, ears, and teeth of all those children who had not in the meantime obtained treatment. The doctor would necessarily carry in his bag all the apparatus for dental treatment, for vision testing and for fitting children with glasses. The district nurse should also be in attendance, and the doctor

would refer to her certain chronic cases such as otorrhœa and parasitic conditions for further treatment.

So much for the main principles underlying the establishment of the school clinic and for the actual details of routine, service, and cost. The chief advantages have been incidentally indicated. They consist in the certainty of getting the children treated and thereby raising the general level of knowledge as to health matters among the public, and especially among the poorer classes, in preventing much disease, illiteracy, and unemployment, and generally in improving the physical condition and raising the standard of living. All these advantages are secured at the cost of little interference with school routine, because the arrangements are in the hands of the education authority and of a medical officer specially appointed for educational purposes. There would be no wholesale exclusion of the children from school, such as might be undertaken by an energetic sanitary authority, but an earnest attempt to make defective children healthy. The general outcome must be obvious (even to the lay mind) without more words.

The chief objections to this practical scheme of affording efficient medical treatment for all defective school children are purely theoretical. They are of two kinds and are based on economic and academic grounds. With regard to the first kind it has been well said, ' Behind everything stalks the phantom of the ratepayer '. We have, however, shown that there is

an enormous economic advantage in the treatment of these children suffering from chronic disease—much greater than in the education of feeble-minded children. To take one illustration alone: the municipality will increase its revenue from the Treasury by obtaining increased grants owing to improved attendance and greater educational efficiency. Dr. J. J. Cronin, of New York, has established this point of view by exposing the short-sighted policy of administrators in neglecting the rational care and treatment of children during school life—only to provide for their custodial treatment in Poor Law infirmaries, prisons, and other institutions during after life.[1]

With regard to the more theoretical objections, these appear to show a lack of appreciation of the factors of the problem. To begin with, family doctors and general practitioners have proved themselves unequal to the task of keeping the children in good health. The fault lies partly with the doctors themselves and partly with existing social conditions. At all events, here is a definite and a practical reason why the municipality should interfere and should undertake the solution of a neglected problem.

Again, it may be reasonably urged that the system of free treatment is liable to abuse, but this objection is equally true of every other system that has ever been suggested. And, after all, what is the nature of the abuse? A parent who cannot afford the doctor's fee

[1] *Report showing the economic waste from neglect of the physical welfare of school children.* Cf. also chap. i, p. 7.

of 2*s.* 6*d.* or 5*s.* is enabled to have his children's vision tested at the expense of the municipality (to which he already contributes according to his means); every child is provided gratuitously with efficient dental treatment, whereas at present there are not sufficient dentists for the population; and the expensive X-ray installation is brought within the reach of all by a system of co-operation.

Finally, some objection may be raised by voluntary associations and charities, local guilds of help, and by that army of keen social workers who, in many places, have done so much to touch the fringe of a great national problem, but who have naturally failed to bring the issue to its logical conclusion. If these societies and associations have any grasp of the situation, they will fall into line (no matter what the original motive for their formation may have been), and they will urge all municipal authorities to take immediate steps to remedy the defects of their school children.

On the other side are more compelling considerations. To secure an improved physical condition for the next generation, to obtain a higher standard both of school attendance and of education, to give a fair chance in life to thousands who are now hopelessly handicapped before the race is well begun, are aims which cannot be lightly set aside. Without the school clinic the whole system of medical inspection becomes practically fruitless. With it, there is opened up the possibility of incalculable benefit to the future citizens of the State.

CHAPTER XVI

COMMON DISEASES AFFECTING SCHOOL LIFE

(*a*) General Diseases. — (*b*) Symptomatic or Local Diseases. — (*c*) Chronic Contagious Diseases, necessitating exclusion from School.

This chapter is written partly for teachers and educationalists and partly for school doctors. It seeks to emphasize the school aspect of a few common chronic diseases. A disease must not be regarded as one of many diseases taken from a catalogue, but only as a disease in relation to its surroundings. So that in the present case each disease is considered not so much from the clinical and medical, as from the educational, point of view. It is on this common ground that the doctor meets the educationalist. Hence the following notes may be of some value to teachers and members of Education Committees, while some of the remarks may not be without interest to medical men and school doctors in that the traditional textbook method of dealing with diseases has not been adopted. For instance, the classification of sore throats and the notes upon malnutrition, hysteria, mouth-breathing, &c. as well as most of the paragraphs on school life, are the outcome of personal experience in school work.

The main purpose of the chapter is to enable teachers

and school doctors to arrive at an early recognition of important conditions affecting school life, and to suggest certain practical lines of educational and hygienic treatment at school. For many simple but essential rules of health are unknown to teachers and are commonly ignored in practice by medical men. At the same time teachers and educationalists are warned of the danger of certain neglected conditions.

A. GENERAL DISEASES

Malnutrition—an abnormal or disordered growth in the development of the tissues and organs of a child's body, not necessarily synonymous with under-feeding.

Causes. Unhealthy surroundings and conditions of life; improper feeding from birth and later, under-feeding, over-feeding; bad housing conditions, over-crowding; insufficient sleep, want of exercise, and proper recreation; rickets; acute infectious or other debilitating diseases; nervous diseases, especially the neurotic temperament; gastro-intestinal disorders.

Symptoms. Anæmia, pallor; weakness, general debility; immobility of face muscles, dark rings round the eyes; external eye diseases; squints; lassitude, listlessness, apathy; inattention, backwardness or mental dullness.

Results. Anæmia; stunted growth and delayed mental and physical development; deformities and curvature of spine; liability to infectious diseases and tuberculosis.

School Life. Malnutrition is at once the most common and, until recently, the least observed of all the unrecognized diseases and affections among children attending elementary schools. It interferes not only with the child's physical development, but also with its educational progress in school. The causes, as indicated above, are many. The greater proportion of cases do not result from insufficient food, though the tendency has been to assign undue prominence to this factor as a cause. Cases of privation and starvation, however serious in themselves, form only a small part of the greater problem of general debility and malnutrition. It is difficult to obtain statistics; for no exact standard of what constitutes a sufficient or an insufficient diet has been established. There is no doubt, however, that a large amount of general debility and malnutrition is caused by improper feeding, extending over a long period of time and dating from early infancy. A similar condition may be induced or increased by injudicious pampering of the children, thereby causing a reaction on their nervous system and leading to degeneration of the tissues, over-development of fat and generally impaired nutrition.

The whole problem of feeding and under-feeding will require careful analysis in the light of future research. At the present time, owing to a want of knowledge of all the factors of the problem, social effort is frequently misdirected.

Treatment should lie, first, in the provision of wholesome food; and, secondly, in the amelioration of the

surroundings and conditions of life. For all classes of children—the underfed, the improperly fed, the starved, the pampered, and especially for those of a neurotic temperament—these conditions can be fulfilled during six months' treatment at an open-air recovery school, though, in the case of the underfed, the root problem still remains unsolved.

Rickets—also a disease of nutrition, beginning as a disorder of the alimentary canal and liable to affect all organs and tissues of the body.

Causes. Unhygienic conditions before the school period, especially insufficient or improper feeding, aggravated by other causes.

Symptoms. Indigestion, anæmia; excessive sweating, especially about the head and during sleep; soft bones, delayed appearance of teeth, backwardness in use of limbs; child-crowing (laryngismus stridulus) and convulsions.

Results. Impaired physique, stunted growth; bony deformities, misshapen head and chest, bowlegs, knock-knees, curved spine; bad teeth; predisposition to bronchial catarrh and tuberculosis; delayed mental and physical development.

School Life. Rickets is the commonest chronic disease of the infant school; and, by reason of the resulting bony deformities, as well as of impaired physique and nutrition, it is especially important. Being a disease of early infancy, its occurrence cannot be prevented in the schools. But if infants from the poorest quarters of urban districts are admitted, at an

early age, to Nursery Schools (as recommended by the Consultative Committee of the Board of Education), ample opportunity will be afforded for the school doctor and the school nurse to indicate necessary remedial measures with a view to preventing the usual occurrence of serious deformities and of excessive malnutrition. Preventive and remedial treatment should lie in the direction of securing for the child an adequate supply of direct sunlight and fresh air and a liberal diet including milk and fat. Special regard must be paid in school to the posture and habits of rickety children as well as to their teeth. The predisposition of rickety children to bronchial attacks and tuberculosis must also be pointed out to parents and teachers.

Rheumatism is not merely an affection of the joints but a general disease which may attack the joints, heart, brain, or other tissues. It is essentially a hereditary disease, that is to say, children of rheumatic parentage are very susceptible to attacks of the disease in one or other of its many forms.

Causes. Probably caused by the entrance of specific germs into the body, possibly through the tonsils, as rheumatic subjects are liable to attacks of tonsillitis. Susceptibility to the disease is an important factor in its causation. Chorea, which is a symptom of rheumatism, may be caused by shock or fright in a neurotic child of rheumatic parentage.

Symptoms: (*a*) *of predisposition:* slight pains in muscles or joints, 'growing pains'; abnormalities of

nervous system and of nutrition, anæmia, nervous excitability, night terrors.

(*b*) *Of general rheumatism:* frequent attacks of tonsillitis; fibrous nodules under the skin, especially at the knuckles, elbows and knees; eruptions (erythema nodosum, purpura), and other symptoms of predisposition.

(*c*) *Of joint affections:* pains, redness, and swelling of joints; symptoms fly rapidly from joint to joint. In sub-acute cases symptoms are less pronounced.

(*d*) *Of brain affection,* which is chorea, or St. Vitus' dance. Unstable nervous condition, inability to sit still, 'fidgets'; muscular weakness, irritability, involuntary twitching of fingers and face muscles, developing later into irregular, unco-ordinated and purposeless movements of arms, head, and lower limbs; awkward, jerky gait.

(*e*) *Of heart disease:* generally very insidious in its onset: slight palpitation, shortness of breath, pallor; in advanced cases, when the heart muscle has begun to give way, blueness of the lips, face, and hands; difficulty in breathing; swelling of the feet.

School life. Rheumatism is particularly a disease of school life. It seldom occurs before three or four years of age, and the first attack is seldom postponed after fifteen or sixteen years. The disease is insidious in its onset, obstinate in its persistence, and especially prone to recurrence. The most essential point is for the school doctor and for the teacher to discover early the children of rheumatic parentage and tendency and

to prevent them from acquiring the disease. The symptoms of hereditary predisposition have been indicated. Each one of these symptoms occurring in a school child requires careful consideration. When the rheumatic tendency has been diagnosed, the doctor should prescribe a modified school curriculum, that is to say, avoidance of long hours and overpressure. Moreover, he should indicate to the parent the special need for careful attention to diet and clothing as well as for an abundance of fresh air, sunshine, and for the prevention of any evil results consequent upon dampness or chills. Ten or twenty children of this kind will be found in every large school, and these, together with those suffering from general debility and malnutrition, should be grouped together for a somewhat modified curriculum. The first signs of an attack, whether of rheumatic fever, chorea, or heart disease, should be sufficient for the child to cease attendance at school.

In the case of chorea, absolute quiet and rest in bed are essential from the outset. After an attack, which usually lasts from one to two months, the child, still being susceptible to rheumatism and heart disease, should not return to school immediately, but should be treated as an invalid for six months. Overpressure and undue excitement should be avoided, and there should be no unnecessary exposure to adverse conditions of weather.

All children suffering from heart disease, whether in the early or in the more advanced stages, should, if

possible, be transferred to special schools for physically defective children.

Dr. F. J. Poynton, in summarizing a paper[1] upon rheumatism and school attendance, emphasizes four main considerations: (1) the excitable nature of the child of rheumatic parentage; (2) the danger of active rheumatism when untreated by rest; (3) the stubborn and relapsing character of the disease; (4) the delicacy of children left with chronic heart disease.

Tuberculosis—a disease caused by the entrance of the tubercle bacillus into the body, may affect any organ—glands, lungs, joints, especially those which have been exposed to injury or infection. In children the bony structures are more often affected than the lungs: hence the greater frequency of hip-disease and other bone affections. Healthy, normally developed, children are seldom affected: the so-called strumous type of child who may have inherited or acquired predisposition to the disease is always susceptible.

Symptoms. Tuberculosis of the lungs is phthisis or consumption; persistent cough, blood-spitting, wasting and anæmia are symptoms.

Affection of bones or joints gives rise to persistent pain, chronic swelling and deformity. Hip-disease is the commonest form, of which persistent limp is often the earliest sign; the knees and ankles are also frequently affected.

[1] *The Problems of Ill-health and School Attendance.* F. J. Poynton, *Transactions Second International Congress on School Hygiene*, vol. ii, p. 605.

Tuberculosis of the spine is known as Pott's disease ; spinal rigidity and persistent pain are the first signs.

Tuberculosis of glands is very insidious ; it leads to local swelling and inflammation, anæmia, general debility, and malnutrition, and may predispose to the disease attacking other organs. The local swelling sometimes results in abscess formation.

When the disease attacks the skin of the face it is known as lupus—now readily treated by the Röntgen rays or by the Finsen light treatment.

Precocity or an abnormal degree of intelligence is often a characteristic sign of tuberculosis.

Tubercular meningitis is a fatal form of the disease in which the membranes of the brain are attacked.

It is seldom met with at school, as even in its earliest stages the child is too ill to remain in attendance. The disease begins with irritability, fretfulness and other signs of an altered temperament. It is always fatal.

Results. Chronic invalidism ; impaired health and physique ; deformity of bones, chest, and joints, permanent crippling ; prolonged absence from school, great educational loss to the child; liability to recurrence. Complete recovery often is the result of persistent and prolonged treatment.

School Life. Three forms of the disease require special consideration in regard to school life :—

1. Of the glands.
2. Of the hip and spine.
3. Of the lungs.

They have one point in common, namely, that early diagnosis, continuous treatment, and prolonged convalescence are essential.

1. Tuberculosis of the glands is possibly the least disastrous form of the disease, but at the same time it is the most insidious, and frequently is unobserved. Being a constant focus of danger, it predisposes to the infection of other organs, especially the lungs. After an attack of measles or whooping-cough, the bronchial glands frequently become the seat of tubercular affection which cannot be discovered. It is often impossible to decide whether chronic glandular enlargement is tubercular or not. Therefore, the only safe rule is to treat all children of the well-known strumous or scrofulous constitution—that is to say, all children of a weakly, debilitated appearance, with flaxen hair, long silken eyelashes, smooth skin, as well as children with enlarged glands, or those constantly suffering from coughs and cold—as if they had an unrevealed form of tuberculosis. In this way the disease can be cured in its earliest stage. A child thus affected attends school with fair regularity, but is thought to be 'delicate', is excused attendance on wet or foggy days, and is often injudiciously pampered at home.

2. Tubercular disease is a very common cause of bony deformity in the school child. Owing to its chronic character a child may remain for years in hospital or nursing home. Absence from school is prolonged and results, in addition to the permanent crippling, in great educational loss to the child. Such

children, however, are often abnormally intelligent and precocious. There is a crying necessity for the establishment of a large number of small residential convalescent schools for these children. On their complete recovery and return to school life, they still require special educational treatment, both mentally and physically, such as is given at the special schools for physically defective and crippled children.

3. In comparison to the other forms of the disease, pulmonary tuberculosis or consumption is relatively uncommon in school life. It is, however, more serious in its results, and is often fatal. It is probable that the disease in its early stages, or before it is revealed, often escapes detection. All cases of pleurisy should be treated as if of tubercular origin. Children suffering from active symptoms—cough, expectoration, and wasting —should be excluded from school for immediate treatment, and partly also to prevent the possibility of other susceptible children being affected by too close personal contact. Early diagnosis is essential. Children suffering from this form of disease should certainly be placed in hygienic surroundings and should be sent for sanatorium treatment until the disease is cured. On their return they should be kept under medical supervision.

Bronchitis is a catarrh or inflammation of the bronchial tubes. It has no particular importance with regard to school life except that it is commonly associated with rickets and frequently occurs as an after-result of measles, whooping-cough, and other infectious

diseases of childhood. Children, on their return after these diseases, especially those coming from poor homes, should be kept under careful supervision by the school nurse or doctor, and the parents should be warned and instructed. Children suffering from an acute attack of course remain away from school, but many children subject to chronic bronchitis attend school and need medical supervision. The liability to tubercular infection should be borne in mind. Great care should be exercised to prevent the present day tendency towards the coddling and pampering of the children.

Nervous Diseases of Childhood. The neurotic temperament is only in part an outcome of modern civilization. It means ' a disposition in which the emotions are easily kindled, strongly felt, and restrained or controlled with difficulty '.[1] It is especially important in school life, because, apart from marked cases, the first obvious signs of the disposition are commonly expressed soon after the child leaves the infant school. All children by nature suffer from nervous instability ; but, in addition to the instability common to their kind, certain children, either from heredity or from unnatural conditions of life, definitely acquire an ' individual instability '—a neurotic temperament—towards the end of the first decade of life. Their future life can, as a rule, be either marred or made during their progress through the elementary school. ' The emotional

[1] *Functional Nervous Disorders in Childhood*, Dr. Leonard G. Guthrie, Oxford Medical Publications—a valuable work that has been freely consulted in the preparation of these notes upon nervous diseases.

temperament may be modified, though it cannot be eliminated, by training and environment.'

Overpressure is a convenient term used to signify educational overstrain.

Causes. Preparation for scholarships and competitive examinations involving concentration upon only one or two subjects ; excessive homework, especially in a child of a neurotic temperament, or if the overstrain is aggravated by anæmia, malnutrition, or by other unhygienic conditions at home or in the school, such as long hours of work, too little play and sleep. ' Educational overstrain is more frequently due to fact cramming than to imparting general information.'

Symptoms. Inattention, lapses of memory, mental dullness, incapacity for concentration and for prolonged mental effort; headaches, absence of mind, ' le petit mal,' drowsiness. On the other hand, there may be undue restlessness, nervous excitability, irritability, night terrors and screaming, and hysteria. ' The symptoms and physical signs of mental overstrain in adults and in children are much alike—although the child seldom draws attention to them.'

Results. Physical and mental prostration, brain exhaustion. If continued, it leads to neurasthenia and chronic invalidism.

Neurasthenia represents a condition of chronic nervous instability. ' It is the outcome or result of the neurotic temperament when subjected to unfavourable conditions and surroundings.'

Causes. Hereditary predisposition—the neurotic

temperament—or it is the result of injudicious upbringing or of overpressure.

Symptoms. The familiar symptoms of neurasthenia, so commonly met with in adult life, are seldom seen in childhood. But recurring attacks of moodiness, irritability and depression, or of hysteria and other neurotic affections, are, even in the child, definite symptoms of neurasthenia. There may also be subjective symptoms such as constant pains, muscular weakness, hypersensitiveness to pain. These symptoms are the result of personal sensations and psychic effects, or of imaginary evils rather than of any definite organic disease.

Results. Physical and mental helplessness and inefficiency; chronic invalidism; hysteria and other neurotic diseases.

School Life. A special régime is necessary for all children suffering from overpressure and nervous disorders. They should be grouped, for modified educational treatment, with children suffering from chronic rheumatism, malnutrition, general debility, and the after-effects of depressing infectious diseases.

During the summer and early autumn months, a period of five or six months at an open-air recovery school should be sufficient to restore them to health. At the same time there is need to secure the co-operation of the parents in adapting the home conditions to the requirements of the children. By some such procedure as this, it should be possible to fit many of the neurotic and overpressed children to take their place

again in the ordinary school under the supervision of a sympathetic teacher.

Hysteria is an uncommon affection of school children. There is, however, a condition known as school or class hysteria—more common in Russia and Germany and other continental countries than in Great Britain. It is characterized by an explosive excitability of the higher nervous centres which may be expressed in sensory or motor paralysis and in deficient emotional control. An example will make this clear. At a school situated in a well-to-do district in London a little girl, who was afflicted with infantile palsy of the left arm, broke her right arm, and was absent from school for several weeks. Within a few days after her return, three children had lost the use of their left arms, and a fourth, being of a rheumatic disposition, had such severe pains in her left arm that she held it to her side and could not be persuaded to use it. All the children were of a neurotic temperament. Two were of Polish extraction : one was very ill-developed, one very affected in manner and speech, and another was supposed to have heart disease. By suggestion, the children were induced to move their arms freely and the head mistress was instructed to see that they did not become paralysed again. The outbreak ended.

Epilepsy is a disorder of the nervous system characterized by loss of consciousness, with or without convulsions. It represents an unstable or an explosive condition of certain nerve cells. In the majority of

cases the first attack occurs before the age of puberty.

Causes. The cause of epilepsy is, generally speaking, unknown. In a few cases, especially in neurotic children, some definite source of local irritation (e. g. indigestion, worms, painful dentition) is believed to be the exciting cause of an attack; but similar sources of irritation do not produce epilepsy in normal children. There is no doubt that heredity plays an important part in causation—if not in the disease itself, at least in the predisposition to it. Epilepsy commonly occurs in children of insane, eccentric, hysterical, neurasthenic, or of alcoholic parents.

Symptoms: (*a*) *Of latent epilepsy* (*in predisposed children*): inattention, forgetfulness, dreamy mental states; marked irritability and sudden passions; headaches, migraine, disturbed sleep; night terrors; incontinence of urine; spasms, involuntary movements.

(*b*) *Of 'petit mal':* this condition simulates a fainting attack, and is accompanied by sudden pallor associated with an absent or a dazed appearance and momentary loss of consciousness. The child may suddenly stop speaking, or whatever it may be doing, and stares fixedly without replying to questions.

(*c*) *Of 'grand mal' or convulsions.* The symptoms of an epileptic fit are too familiar to require detailed description. The child is generally warned of an impending seizure by some localized sensation of indigestion, or of sight or hearing, or by some psychical disturbance, then suddenly loses consciousness and

falls to the ground. The hands are clenched, the teeth become fixed, often biting the tongue; the muscles are rigid and the patient frequently foams at the mouth. This stage is soon followed by slight or by violent movements of the muscles. Relaxation follows and the child falls into a profound sleep. On waking, the child may be to all appearances normal, suffering only from headache or from a confused state of mind. Sometimes a trance-like condition follows an attack, in which the patient may unconsciously perform certain automatic actions, such as undressing.

(*d*) *Of chronic epilepsy.* The frequent recurrence of epileptic fits leads to impairment of physique and of mental capacity. The child becomes anæmic and often acquires a defective appearance. Chronic epilepsy is commonly associated with congenital mental deficiency.

School Life. As far as school life is concerned, epileptics must be divided into three classes :—(1) Those who suffer only from 'petit mal' or from slight fits in bed at night-time or on waking. Such children should be allowed to attend the ordinary schools or they might be separated with other delicate and neurotic children into special classes for educational treatment; and during the summer months at least they should be sent to open-air recovery schools. (2) Those who suffer from infrequent attacks of 'grand mal' without any other bad symptoms, and are otherwise normal in intellectual attainments. Such children should be excluded from ordinary schools, as an epileptic seizure in a classroom, even once a month, is disturbing to the

children and distressing to the teacher. They should be transferred to special epileptic schools and should be under constant medical supervision and treatment. (3) Those who, on account of the frequency or the severity of their seizures, or on account of special eccentricities or resulting impairment of mental capacity are suited only for detention at epileptic colonies.

In dealing with this subject, Dr. Poynton has drawn attention to two main problems which require consideration in every case of epilepsy :—(*a*) The frequency and character of the actual fits, and (*b*) the mental state of the affected children. No hard and fast set of rules can be drawn up for the educational treatment of these three groups of epileptic children, but each case must be considered on its individual merits.

Mental Deficiency. It is impracticable to deal in a few lines with the causes and symptoms, or even with the school aspect, of mental deficiency. The methods of examination, as well as a practical classification of mentally defective children, according to their educational requirements, have already been indicated briefly.[1] Cases of ' word-blindness ', ' word-deafness ', and of cretinism are occasionally met with.

Special provision is made by Acts of Parliament for the educational treatment of all grades of mental defect between imbecility and natural dullness or backwardness, as well as for blind and deaf children. It rests with local education authorities to fulfil their responsibilities ; and, as has been suggested, the establishment

[1] Cf. chap. xi, p. 164 ; also chap. xiii, p. 202.

of intermediate or lower grade schools in large towns, and of special classes in smaller towns, is essential for the educational treatment of dull and backward children.

Blind and Deaf Children. Special schools have been established in London for these children—nine for the blind and thirteen for the deaf. There are also institutions in other parts of England. Nearly half the cases of ' educational blindness ' are the result of neglect and specific infection during the first week of life ; others are suffering from high myopia, congenital cataract, or from scarring of the cornea. There is, however, a still greater need for the provision of special educational treatment for semi-blind children suffering from chronic eye affections. Such children should be prevented from doing any fine or close work, such as sewing or writing and drawing with pens and pencils on paper or on slates. Similarly for a large group of semi-deaf children special educational facilities are needed. With regard to the ' educationally deaf ', there is little certain knowledge ; nor are the various combinations of mental deficiency with defects of special senses properly understood. An attack of cerebro-spinal meningitis in infancy is responsible for a large proportion of blind and deaf cases, whether or not associated with mental deficiency. All children attending blind and deaf schools should be under constant medical supervision.

Stammering. Speech defects have already been considered at some length.[1] But no special reference

[1] See chap. xi, p. 163.

to stammering or stuttering was made. Stammering results from spasm of the respiratory muscles in the act of speech ; the spasm may also be associated with inco-ordination between the articulatory and the respiratory muscles. 'Stammering is a spasmodic arrest of utterance.' 'Stuttering consists in spasmodic repetition of initial syllables of words', and, being almost entirely due to imperfect breathing, is more amenable than stammering to treatment by respiratory exercises. Children suffering from speech defects should be transferred to special classes or special schools for temporary educational treatment.

For a detailed account of this subject Dr. Leonard Guthrie's book on functional nervous disorders in childhood should be consulted.

B. SYMPTOMATIC OR LOCAL DISEASES

Anæmia implies an impoverished state of the blood system due to a reduction in the amount of blood as a whole or of its constituents, especially of the red corpuscles or of their contained hæmoglobin. During school life it is seldom a separate entity, but, for the most part, only a symptom of some local or general disease.

Causes. Frequent hæmorrhages or losses of blood ; malnutrition and general debility, aggravated by bad housing conditions, want of fresh air, improper food or insufficient sleep ; rickets ; the rheumatic tendency ; tuberculosis ; hereditary syphilis ; Bright's disease,

especially following scarlet fever; digestive disturbances.

School Life. Anæmia is important because it is commonly neglected. Its cause should, if possible, be discovered by the school doctor, before the parents are instructed to seek advice. In most cases a child suffering from anæmia should continue in attendance at school, but for a large number some modification of the school curriculum is required. Many are especially suited for transference, for a time, to open-air recovery schools. For those suffering from rheumatism or tuberculosis the appropriate treatment has already been indicated. All cases should be treated, in accordance with common-sense principles, by means of improved hygienic conditions as to sun, fresh air and better food rather than by medicinal treatment in the form of arsenic or iron.

Towards the close of school life anæmia may be a sign—especially in girls—of physiological changes at puberty.

Headaches. Headache is a symptom of great importance in relation to school life. It is essential that the cause of the trouble should be discovered as early as possible.

Causes. Apart from being an early symptom of an acute illness, headaches may either be occasional or habitual. Occasional or temporary headaches in school are due to overheated rooms (temperature above 62° or 63°), to want of adequate ventilation, fresh air or of exercise, to temporary overwork, or to nasal

catarrh. Frequent or habitual headaches may be due to any of the above causes if persistent; but more generally to eye-strain or defective vision, to anæmia, decayed teeth or digestive disturbance, to over-pressure, to an epileptic or other neurotic predisposition.

All these causes except those due to overpressure, migraine, and the neurotic temperament can be removed instantly. The headache of the overpressed neurotic child is more difficult to deal with. In the past the policy has often been to keep the child from school, to treat him as delicate, to pamper him injudiciously with extra clothes, extra food and extra attention. The policy of the future should be to keep the child at school under improved surroundings, to impress upon the parents the necessity for altered conditions of life and to send the worst cases for educational treatment at open-air recovery schools.

Sore throat is a condition to which much attention must be paid in school. Many children are subject to sore throat, especially mouth-breathers and those who suffer from chronic pharyngitis, enlarged tonsils and adenoids, or the rheumatic tendency. Nearly all sore throats are the result of infection from a previous case or of so-called 'contact infection'.[1] Therefore they must always be regarded with suspicion. *From the school point of view* and until such time as a scientific classification, based on bacteriological examination, can

[1] Contact infection implies the transference of quite fresh infectious matter by means of pencils, sweets, &c.

be prepared, sore throats may be divided for practical purposes into two kinds:—

1. *Severe:* sufficient to keep the child away from school and giving rise to general symptoms.

2. *Slight:* not involving the child's absence from school for more than a day or two, if at all.

This classification, depending as it does on the attendance or non-attendance of a child at school, is based on incontrovertible fact, and is unaffected by the varying standard of severity adopted by careful and by neglectful parents.

Sore throat of the first type is of little account, so far as the spread of infectious disease in school is concerned, and may be due to :—

(1) Diphtheria.
(2) Scarlet fever.
(3) Follicular tonsillitis or epidemic sore throat.
(4) Influenza.
(5) Acute pharyngitis or laryngitis.

Under this heading sore throats are only of importance before the absence and after the return of the children to school; and experience shows that, comparatively speaking, few secondary cases are contracted in school from these severe sore throats.

Sore throat of the second type may be due to :—

A. Specific Infectious Diseases.

(1) Diphtheria.
(2) Scarlet fever.
(3) Follicular tonsillitis or epidemic sore throat.

B. Other conditions not generally regarded as infectious.

(1) Influenza or severe cold.
(2) Nasal catarrh (especially when associated with adenoids).
(3) Rheumatism.
(4) Chronic tonsillitis.
(5) Pharyngitis and laryngitis.

This subdivision of slight sore throats into two groups—the specific infections of diphtheria, scarlet fever and follicular tonsillitis and the remainder is important.

With regard to the second category, children should be excluded from school till all symptoms are abated. No special precautions need be taken to prevent spread of cases in school.

The first group, being infectious, are of special importance when definite cases of these diseases have previously been reported from the same classroom or from the same houses or streets in which the affected children live. In such circumstances all sore throats should be treated as guilty until proved innocent.

With the object of discovering mild or missed cases of these conditions in school, the following routine may be found valuable. When two or more cases of sore throat, whether due to scarlet fever, diphtheria or epidemic sore throat, have occurred in one classroom, the teacher should be instructed to keep a list of all children absent for a whole day or more, especially if it

be a Friday or a Monday.[1] On their return the children or the parents should be questioned as to whether the absence has been due to indisposition. If indisposition is admitted, they should be cross-questioned as to the presence of sore throat. If sore throat has occurred, no child should be readmitted except on medical authority. In the case of diphtheria bacteriological examination is essential. In the case of scarlet fever the presence of headache and vomiting synchronous with the appearance of sore throat should be considered as sufficient evidence to treat the case with suspicion for two to three weeks in order to watch for desquamation or for nasal excoriation. The rash of a mild case of scarlet fever is often so evanescent that its alleged absence may be regarded as evidence of little value.

With regard to follicular tonsillitis or epidemic sore throat, the children should not be re-admitted until one week after all signs and symptoms of sore throat have subsided.

In the case of sore throat, medical certificates of freedom from infectious disease are of little value unless the doctor, before certifying, has realized that the child has been exposed to the infection of scarlet fever, or unless in the case of diphtheria he bases his certificate upon bacteriological examination.

By some such procedure as this, it will be possible to

[1] Absence on a Friday or a Monday implies that the child has not been under observation for three whole days, quite long enough a period for a mild attack of scarlet fever.

prevent the spread of infection in school—which cannot be as readily arrested by the daily visit of a school doctor as by faithful co-operation on the part of head teachers.

Sore throats at the beginning of an attack of influenza or of a severe cold present the greatest difficulty. If there have been any cases of scarlet fever or diphtheria in the same classroom or many such cases in the district they should be regarded with suspicion. If not, they may be allowed to return to school in the ordinary course, when all symptoms have disappeared.

Mouth-breathing is a very common symptom among school children of all ages. Professor Osler has suggested that there are more mouth-breathers per acre in England than in any other country in the world, and has indicated the possibility of climatic influence as a factor in its causation. At all events, it appears to be equally common among town and country children. Many years ago Kit Catlin published a pamphlet entitled 'Shut your mouth and save your Life', but the importance of the subject has only recently attracted attention. The pamphlet was well illustrated to show the difference between mouth-breathing and nasal breathing and their effect upon the appearance, physique and character of the children.

Mouth-breathing is of two kinds: (1) Habitual, due to an acquired habit; (2) Obstructive, due to some definite obstruction in the nasal or respiratory passages. Habitual mouth-breathing arises from careless upbringing and disuse of a pocket-handkerchief. The

habit of mouth-breathing by day and of snoring by night is acquired because the nasal passages are allowed to become blocked with mucus. Mouth-breathing gives the impression of stupidity, and there is little doubt that mouth-breathers are more disposed to nasal catarrh and diseases of the respiratory tract. The good effect of nasal breathing can be demonstrated by providing pocket-handkerchiefs to the infants' department of certain schools and by contrasting the appearance of the children after three to six months' practice in their use. When mouth-breathing is due to obstruction, adenoid growths in the naso-pharynx are by far the commonest cause. Other causes, such as nasal polypi, chronic nasal catarrh, enlarged turbinal bones, deviated septum, need only be mentioned.

The remedy and prevention is very simple and can be carried out even in the poorest quarters of populous centres. The daily practice of breathing exercises should not be undertaken until the nasal passages have been adequately cleared by the proper use of the pocket-handkerchief—an elementary principle of common sense often disregarded in practice.

Adenoids is a convenient term used to signify the abnormal or excessive growth of lymphoid tissue in the post-nasal or naso-pharyngeal space. As a result of this abnormal growth, the posterior nares are partially blocked and nasal breathing is difficult. This difficulty breeds habit. The adenoids continue to grow ; and, as a result, a vicious circle is established.

Their exact causation has not been determined. Some authorities regard their presence as an expression of disease following measles, whooping-cough or influenza; other authorities as due simply to an unexplained overgrowth of lymphoid tissue—possibly as a result of the mucous membrane and nasal passages not being properly cooled by the intake of cold air. It is impossible to say whether nasal catarrh is due to the presence of adenoids and the nasal obstruction or whether the adenoids are the result of nasal catarrh. The typical appearance of a child suffering from adenoids is too well known to require description. The evil results, however, are not always fully appreciated and may be given in tabular form :—

1. Nasal catarrh; liability to colds and bronchitis.
2. Deafness and ear discharges.
3. Sore throat; susceptibility to infectious disease and tuberculosis.
4. Enlarged glands in neck.
5. Lowered mental capacity; dullness, spurious feeble-mindedness.
6. Impairment of general nutrition and physique; lowered vitality; predisposition to chest disease and tuberculosis.
7. Deformity of nasal passages and also of chest.

When the presence of adenoids has been definitely ascertained, they should be removed by a surgical operation. In spite of their removal they commonly recur, though this tendency may possibly be overcome by the practice of suitable breathing exercises.

Enlarged tonsils represent an overgrowth of tissue normally present. The cause of this overgrowth has not been definitely ascertained, but it may result from frequent attacks of inflammation. It undoubtedly occurs very commonly in children of rheumatic tendency ; and, as Dr. George Stewart has pointed out, the condition is associated with a septic state of the mouth due to defective and carious teeth with enlarged submaxillary and cervical glands. In school life enlarged tonsils are important because, like adenoids, they obstruct respiration and are a potential source of danger when exposed to the infections of diphtheria, scarlet fever, rheumatism or influenza. For these reasons their removal should be advised.

Otorrhœa (or discharging ears) signifies a catarrhal condition of the ear passages and is often the result of chronic inflammation following scarlet fever or measles. Sometimes the condition may merely be due to the presence of a foreign body, such as a pea or a bead, or to an excessive accumulation of wax. Otorrhœa is frequently associated with, or secondary to, the presence of adenoid growths or enlarged tonsils. An ear discharge may signify a more serious condition, such as acute inflammation of the middle ear with the constant risk of extension of the disease to the cranial cavity leading to meningitis. As far as school life is concerned, otorrhœa frequently causes permanent deafness and results in marked educational backwardness. Occasionally also the discharge becomes offensive, necessitating exclusion of the affected child from

school. The condition is generally very chronic. Many cases go on for months and months. They require skilled attention daily, often syringing two or three times a day, which cannot in most instances be satisfactorily undertaken by the parents.

Foreign Bodies. In the case of a foreign body being impacted in the ear or nose the child should be referred for medical treatment. There should never be any amateur attempt on the part of teachers to remove such things as impacted peas or beads from a nose or ear. In the case of a small piece of grit or dust getting into the eye and causing irritation, it will be well for the teachers to learn how to evert the upper and lower eyelids with a view to removing the foreign body by means of a clean pocket-handkerchief.

Accidents. These are dealt with fully in manuals and textbooks on first aid to the injured, and are not met with so commonly at school as at home.

Enlarged Glands in the neck are very common but are frequently unobserved. They are the secondary result of definite infection which may be either general or local. General infection, usually associated with anæmia, debility or malnutrition, occurs in the strumous type of child and is often an insidious form of tuberculosis. Other glands in the body are usually affected at the same time. Infection, however, is more commonly of local origin and, in the case of glands in the neck, may be due to temporary affections such as inflamed throat, tonsillitis, and to sore places and eruptions on the scalp or face such as impetigo and

eczema, or still more generally to chronic conditions, such as a verminous condition of the head or decayed teeth, which cause enlargement of the glands under the jaw.

The condition of tubercular or of general infection of these glands may be aggravated by a superimposed condition of local origin or vice versa. The glands slowly increase in size and, if the cause is not removed, lead to abscess formation. Treatment must therefore be directed not only to removing the cause of the condition but also to improving the general nutrition and environment of the children.

Defective Teeth have already been dealt with at considerable length in the chapters on medical treatment.[1]

Visual Defects in their relation to school life fall under three heads: (1) External eye diseases; (2) Internal Eye diseases; (3) Errors of refraction and squints.

External Eye Diseases are commonly associated with general debility or with malnutrition of local tissues from various causes. The following varieties require special consideration with regard to school children :—

1. *Phlyctenular conjunctivitis* is extremely common in neurotic and strumous children, and may be an indication of tuberculosis. Chronic cases can scarcely be dealt with effectively unless a complete change in environment and conditions of life is secured.

2. *Keratitis* (*inflammation of the cornea*) may be

[1] Chap. xiv, p. 219, and Chap. xv, pp. 242 and 251.

associated with phlyctenular conjunctivitis or may be due to corneal ulceration which leads to permanent scarring and impairment of vision. Otherwise it is often interstitial in character without any ulceration and is due to inherited syphilis. This variety generally is observed only in the upper standards of the school. Association of Hutchinson's teeth in the affected individual, or in brothers or sisters, renders the diagnosis clear.

3. *Blepharitis* (*sore eyes*) is either an indication of neglect or of an error in refraction. It is commonly associated with the presence of adenoids and other catarrhal conditions of neglected children. A frequent recurrence of styes indicates a similar tendency. Hypermetropia commonly predisposes to these affections. Dr. Jonathan Hutchinson, many years ago, called attention to the enormous importance of the more common use of 'golden ointment', as being likely to confer an inestimable benefit on the national well-being.

4. *Contagious affections of the eye* will be considered later.

Internal Diseases of the Eye. Of these, the commonest affection in school children is disseminated choroiditis, as a result of which a permanently damaged retina is left, often interfering seriously with the visual field. More rarely cases of iritis, due to rheumatism or syphilis, are seen. The eye may be obviously inflamed; the iris itself has a muddy appearance, and the surrounding blood vessels are injected. To pre-

vent adhesions to the lens, it is essential that the pupil should be dilated by means of a mydriatic.

Errors of Refraction. All varieties of defect are commonly met with in school children—short sight, long sight, and astigmatism. It is unnecessary to give an account of errors of refraction, though two or three points, not commonly recognized, must be mentioned. In all matters dealing with children's eyesight, the most important factor for consideration is the enormous power of accommodation in the young child—a power which steadily decreases during school life. It is only in neurotic children, with a view to preventing headaches, that a very accurate correction in the error of refraction is required. But no child should be permitted to wear glasses until the refraction has been determined after dilatation of the pupil by means of a mydriatic. As a general rule the strongest convex or the weakest concave glasses are the most suitable for school children.

Squints in the school child indicate a want of muscular balance. A squint frequently appears as the result of general debility and malnutrition, usually following an acute infectious disease or other debilitating conditions. Habitual squints require immediate attention. If very pronounced at an early age, operative treatment is necessary. If the squint comes on gradually during school life, it is probably the result of excessive convergence associated with hypermetropia and with debility or malnutrition, and the defect may be remedied by the use of glasses. An external squint,

associated with short sight, is seldom seen in childhood.

Deformities in the school child are of two kinds, (1) congenital; (2) acquired. Congenital deformities, such as club feet, hare lip, cleft palate, and dislocation of the hip, should have been attended to before school life. Acquired deformities are the result of infantile paralysis, tubercular bone disease, rickets, accidents, or of malnutrition. Most of these have already been considered from the school point of view under their respective headings. There are, however, a few important points in regard to infantile paralysis and lateral curvature of the spine.

Infantile paralysis is an acute disease of early infancy and leaves its mark in the form of one or more partially or completely paralysed limbs. The acute attack over, prolonged and careful treatment in the form of extra nourishment, massage, and electricity is necessary, but is seldom obtained. The worst cases, requiring either operative treatment or the use of some mechanical apparatus to correct the deformity or to support the limb, should be grouped together for educational purposes in special schools for crippled and physically defective children. A nurse capable of giving instruction in remedial exercises should be in attendance. At the same time, these paralytics should be trained to follow trades or occupations suitable to their conditions.

There is another kind of paralysis—generally caused by hæmorrhage or disease of the brain either at birth

or shortly after. In these cases, the paralysis is associated with rigidity and spasm, and with some degree of mental defect. Frequently these children are imbeciles or idiots, and are quite ineducable.

Scoliosis, or lateral curvature of the spine, is often the result of rickets, but it is primarily associated with debility and malnutrition. It is common in anæmic girls. Incorrect positions at school are responsible for a large number of cases. The first sign is inequality in the level of the shoulders, or some awkwardness in gait. Slight cases can be treated at home, but children with marked deformity should be sent to special schools for a course of educational treatment by means of remedial exercises and movements.

C. CHRONIC CONTAGIOUS DISEASES

NECESSITATING EXCLUSION FROM SCHOOL

Ringworm is an affection almost peculiar to school life. It is exceeding contagious and is due to a highly resistant vegetable fungus which may affect either the scalp or the skin generally.

Appearance: on the skin, a round, reddish, scaly patch which causes itching and irritation. The patches tend to clear up in the middle and to spread as an inflamed edge of raised skin. On the scalp, ringworm tends to spread rapidly and to form several bald, scurfy patches on which may be seen the broken stumps of hair, characteristic of the disease. So long as the patches remain scurfy, the disease is active and

contagious. The serious effects of ringworm upon school life and its treatment have already been considered in a previous chapter.[1]

Favus, a rare disease, is for the most part confined to the alien population in East London, and to the poorest quarters of other towns, Like ringworm, it is due to a highly resistant vegetable fungus. It may be recognized by the yellow, honeycombed and thickly-crusted condition of the scalp. It is exceedingly chronic, and difficult to cure.

Verminous Conditions. More than half the elementary school population have been affected in some degree with verminous conditions. Not only dirty children but also those who come from what appear to be cleanly homes are affected.[2] Head lice are the commonest. Their eggs, generally known as 'nits', are cemented to the hair, and, therefore, are removed with great difficulty. Nits under favourable conditions develop into lice in seven or eight days. Boys' hair can be close cropped and their heads cleansed without trouble. The worst obstacle to cleanliness is the imaginary disgrace which girls associate with short hair. As soon as fashion dictates short hair for girls under 12, the problem of verminous heads will be solved. Body lice lay their eggs in the clothes. They are more common in school children than is usually supposed; but they are only found in the most

[1] Chap. xiv, p. 214.

[2] It has been well said:—'No person should be blamed for *having* lice,—only for *keeping* them.' Children are commonly infected by wearing each others' hats and caps, or from combs and brushes.

neglected children coming from the dirtiest homes.[1] With a view to the cleansing of verminous children, new powers and responsibilities have been given to education authorities by the Children Act, 1908.[2]

Scabies, or itch, is a contagious disease caused by a small parasite which burrows into the skin and lays its eggs. Infection is conveyed from a previous case, generally by means of close personal contact, or by clothes and towels. The thin skin between the fingers and on the back of the wrist and forearm is generally attacked first. The itching, which is usually worse at night, and the characteristic appearance of the burrows accompanied by signs of scratching should lead to an early diagnosis of the case. Affected children must be excluded from school. A hot bath with the free use of soap followed by the application of sulphur ointment for two or three days is a certain remedy. All infected clothes should be thoroughly disinfected by the local sanitary authority before being worn again.

Impetigo, or infectious sores, frequently attacks dirty and neglected children and spreads rapidly from child to child. It is highly contagious and is often conveyed from one part of the body to another by picking or scratching. Except in very slight cases, all affected children should be excluded from school. On the scalp it is commonly seen in grossly neglected cases of verminous or other parasitic conditions. It has been observed to occur commonly in classrooms where

[1] Cf. Chap. xii, p. 185.

[2] See Appendix II, D. p. 327.

several of the children have been suffering from sore throat, and sometimes it appears to be associated with outbreaks of scarlet fever and diphtheria.

Contagious Eye Diseases, usually known as ' blight ', are common in school. Conjunctivitis as a school epidemic is usually met with as ' pink-eye ' in which a rosy blush of the conjunctiva may be observed. There is an infectious muco-purulent discharge due to the Koch-Weeks bacillus. Outbreaks due to other infections occasionally occur. Constant blinking and dread of light associated with a red and swollen conjunctiva and a muco-purulent discharge are the most obvious signs of the disease.

Chronic conjunctivitis with ' granular lids ' in unhealthy strumous children must be carefully distinguished from the more serious but uncommon disease—trachoma. Cases of long standing should certainly suggest a suspicion of trachoma which, in advanced stages, gives rise in the child to a sleepy appearance with half-shut eyes, and with dark rings round the eye. Trachoma cannot be diagnosed with certainty until the lids have been everted. Doubtful cases should always be treated as trachoma. All these cases of conjunctivitis are contagious, and affected children should be excluded from school. Great care should be taken to prevent the common use of handkerchiefs and towels by affected children.

After-effects of Infectious Diseases. There is no need to give any account of the acute infectious diseases. But, from the school point of view as well as from

that of the public health, the after-effects of measles, whooping-cough, and other childish ailments are of the utmost importance. Many of these diseases follow one another in rapid succession, and, if the child is in a neglected or debilitated condition, serious complications nearly always supervene. After measles, whooping-cough and influenza, pulmonary complications are common and, as a result the damaged mucous membranes and the enlarged bronchial glands offer a suitable soil for the deposit and growth of the tubercle bacillus. An attack of scarlet fever, if neglected during convalescence, frequently leads to discharging ears or to inflammation of the kidneys. All children, on their return to school after an attack of any infectious disease, should be brought to the notice of the school doctor, and should be examined again from time to time.

APPENDIX I

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APPENDIX II

EXTRACTS FROM OFFICIAL DOCUMENTS AND MEMORANDA CONCERNING MEDICAL INSPECTION OF CHILDREN IN PUBLIC ELEMENTARY SCHOOLS[1]

A

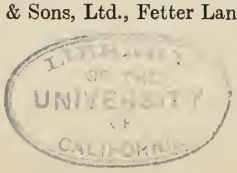
MEMORANDUM ON MEDICAL INSPECTION OF CHILDREN IN PUBLIC ELEMENTARY SCHOOLS

BOARD OF EDUCATION. CIRCULAR 576.

THE Board of Education desire at the outset to emphasize that this new legislation aims not merely at a physical or anthropometric survey or at a record of defects disclosed by medical inspection, but at the physical improvement, and, as a natural corollary, the mental and moral improvement, of coming generations. The broad requirements of a healthy life are comparatively few and elementary, but they are essential, and should not be regarded as applicable only to the case of the rich. In point of fact, if rightly administered, the new enactment is economical in the best sense of the word. Its justification is not to be measured in terms of money but in the decrease of sickness and incapacity among children and in the ultimate decrease of inefficiency and poverty in after life arising from physical disabilities.

2. The section of the Education (Administrative Provisions)

[1] In deference to the wishes of the publishers these official documents and memoranda have not been reprinted in full. They may be obtained from Messrs. Wyman & Sons, Ltd., Fetter Lane, E.C. Price One Penny or Twopence each.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Act, 1907, which concerns medical inspection of school children (section 13) is as follows :—

'13.—(1) The powers and duties of a Local Education Authority under Part III of the Education Act, 1902, shall include—

[(*a*) Power to provide for children attending public elementary schools, vacation schools, vacation classes, play centres, &c.]

(*b*) The duty to provide for the medical inspection of children immediately before or at the time of or as soon as possible after their admission to a public elementary school, and on such other occasions as the Board of Education direct, and the power to make such arrangements as may be sanctioned by the Board of Education for attending to the health and physical condition of the children educated in public elementary schools :

Provided that in any exercise of powers under this section the Local Education Authority may encourage and assist the establishment or continuance of voluntary agencies and associate with itself representatives of voluntary associations for the purpose.

(2) This section shall come into operation on the first day of January nineteen hundred and eight. . . .

The present Act is not intended to supersede the powers which have long been exercised by Sanitary Authorities under various Public Health Acts, but is meant to serve rather as an amplification and a natural development of previous legislation. . . .

Organization

4. The respective functions of the Board of Education and the Local Education Authorities are clearly defined by the Act. The duties thrown upon the Board consist in advising Local Education Authorities as to the manner in which they should carry out the provisions of the Act, and in supervising the work they are called upon to undertake ; in giving such directions as may be necessary regarding the frequency and method of inspection in particular areas ; and in considering and sanctioning such arrangements for attending to the health

and physical condition of the children as may be submitted to them by individual Authorities. The Board will also collate the records and reports made by the Authorities and will present an annual report to Parliament.

The duty of carrying out the annual inspection has necessarily been entrusted by Parliament to the Local Education Authorities and not to the Board. Each Authority must therefore in due course appoint such Medical Officers or additional medical assistance as may be required for the purpose. . . .

5. In view of the varied influences which affect, directly or indirectly, the health of the children of the nation, it is manifestly of the highest importance that the administration of this Act should rest upon a broad basis of public health, and should not only secure for Local Education Authorities as much freedom as is consistent with adequate uniformity in the presentation of results for comparative purposes, but should also use to the utmost extent the existing machinery of Medical and Sanitary Administration, developing and supplementing it as required, rather than supplanting it by bringing into existence new agencies, partially redundant and possibly competing.

The Board view the entire subject of school hygiene not as a speciality or as a group of specialities existing by and of themselves, but as an integral factor in the health of the nation. The application of this principle requires that the work of medical inspection should be carried out in intimate conjunction with the Public Health Authorities and under the direct supervision of the Medical Officer of Health. The advantages of such unification of the Public Health services have already been recognized by the Interdepartmental Committee on Medical Inspection and the Feeding of School Children, and also by the Local Government Board, who specifically require every Medical Officer of Health to report officially upon matters relating to the sanitary condition of all schools, including the 'action taken (by the Sanitary Authority) in relation to the health of the scholars and for preventing the spread of infectious disease.' . . .

School hygiene cannot be divorced from home hygiene, and this in turn is intimately bound up with the hygienic conditions of the community. Efficiency and economy require, therefore,

an organic relationship between the daily work of the school authority and of the authority responsible for the administration of the wider branches of public health, including the supervision of water and milk supplies, food, housing and sanitation, inquiries into matters affecting infant mortality (including ante-natal influences), home visiting by men and women inspectors, sanitary and bacteriological investigations, the provision of hospital accommodation, disinfection, the cleansing of verminous persons, the notification of the prevalence or otherwise of diseases, such as phthisis, affecting the adult population, and the consideration of social factors, such as the occupation of the parents, or the health, habits, and physical conditions of the family, all of which have a bearing, direct or indirect, upon the children's health. . . .

Generally speaking, the work of inspection should be supervised by the Medical Officer of Health of the Authority which appoints the Education Committee; and when the work is obviously more than he can undertake unaided, it should be entrusted to one or more medical officers working under his supervision. In some districts it will be found convenient for such officers to be local Medical Officers of Health holding office within the county; in others, they may be registered medical practitioners specially appointed for this purpose. Provided that the principle of co-ordination of the medical services is secured in practice, and that the requisite personal and professional qualifications for the new work are present, it is clear that the functions of the school medical officer may be exercised by a medical officer of health, a Poor Law medical officer, a private practitioner, or, as occasion requires, a skilled specialist. When it is necessary to appoint officers for the purpose of the Act it is extremely important that persons of suitable qualifications and experience should be selected, even though they may not be called upon to give the whole of their time to these duties and it should be noted that there are many cases in which women are likely to be specially suitable. In making such appointments preference should be given to medical men and women who (1) have had adequate training in State Medicine or hold a Diploma in Public Health, (2) have had some definite experience of school hygiene, and (3) have enjoyed special opportunities for the study of diseases in children. . . .

Subsidiary Agencies

8. The Board are convinced that the work of medical inspection cannot be properly accomplished by medical men without assistance. The teacher, the school nurse (where such exists) and the parents or guardians of the child must heartily co-operate with the school medical officer. In whatever way the system be organized, its success will depend, immediately and ultimately, upon the cordial sympathy and assistance of the teachers. . . .

The increased work undertaken by the State for the individual will mean that the parents have not to do less for themselves and their children, but more. It is in the home, in fact, that both the seed and the fruit of public health are to be found. All-round co-operation between school medical officer, teacher, nurse, health visitor, and parent will prove both effective and economical, and the full utility of the Act will not be secured unless, in advising Local Education Authorities, the medical officer pays careful attention to considerations of expenditure and to the relative urgency of the reforms he proposes to undertake.

Character and Degree of Medical Inspection

9. From what has been said it will be clear that the fundamental principle of section 13 of the new Act is the medical examination and supervision not only of children known, or suspected, to be weakly or ailing, but of all children in the elementary schools, with a view to adapting and modifying the system of education to the needs and capacities of the child, securing the early detection of unsuspected defects, checking incipient maladies at their onset, and furnishing the facts which will guide Education Authorities in relation to physical and mental development during school life. . . .

10. The directions given in this circular as to the degree and frequency of inspection refer only to the minimum medical inspection, the effectiveness of which will in future be one of the elements to be considered in determining the efficiency of each school as a grant-aided school. They are not intended to exclude other medical work, which the Board trust will be undertaken by Local Education Authorities according to

their abilities and opportunities. For example, the re-testing of the eyesight of every child periodically would be most valuable; an annual measurement of height and weight; the more frequent examination of particular children, especially of those suspected to be suffering from deficient nutrition or found to be defective at former inspections; careful anthropometric surveys or special inspections at various ages of school life; and similar investigations of a special nature undertaken in particular districts, come within the category of additional medical work wholly desirable where practicable, and calculated to advance school hygiene. Such work, however useful, should be looked upon as subsidiary to the main purpose of the Act. . . .

Regulations

12. The Board have decided under section 13 of the Act that *not less than* three inspections during the school life of the child will be necessary to secure the results desired.[1] The first inspection should take place at the time of, or as soon as possible after, admission to school; the second at or about the third year (say, the seventh year of age); and the third at or about the sixth year of school life (say, the tenth year of age). A further inspection immediately before the departure of the child into working life would be desirable where practicable, and in some areas it may be best for this to take the place of the third inspection. Certain adjustments will be necessary in working out any standard in practice, as it will at once be evident that without such adjustment the first year (1908) would be unduly burdened with the inspection of the children newly admitted and of all the children already in school.

Provision should be made by each Authority, when the Act has been sufficiently long in operation to be in normal working, for the inspection in each year of (*a*) the children

[1] There will be special areas where the Board may from time to time require that the inspection should be at shorter intervals and of a more searching character, and also areas in which, owing to largeness of size or population, some exception may have to be made in the early years by way of reduction of the burden per annum.

newly admitted ; (*b*) the children in the school who in that year had matured for their second inspection ; (*c*) those who had matured for their third inspection ; and where practicable (*d*) those about to leave school might also be inspected. But in the first year (1908) it may prove impracticable to attempt more than the inspection of the children newly admitted and those leaving school ; and in the second year (1909) the Board will be satisfied with the inspection of those newly admitted and those leaving, with the addition of children who have matured for their second inspection (which is perhaps the occasion of all others requiring the most thorough examination). Some such adjustment would tend to equalize the burden over successive years. It will be understood that the precise way in which the children are grouped in the school for medical inspection will vary according to the internal organization and circumstances of each school. It may be most convenient, for instance, to carry out the inspection on an age basis rather than on a basis of period of school life. In subsequent years the Board may issue notice modifying the age periods for inspection in order to obtain facts respecting child physique at ages other than those included above. . . .

13. The following further regulations should be observed :

(*a*) The inspection should be conducted in school hours and on school premises, and in such a way as to interfere as little as may be with school work. The examination of each child need not, as a rule, occupy more than a few minutes.

(*b*) The convenience of the teaching staff and the circumstances of each school must receive consideration, and in these matters and in the actual examination the medical officer will no doubt exercise sympathy and tact, giving due thought to the personal susceptibilities of those concerned.

(*c*) The facts revealed by inspection must be entered in a register kept at the school, the confidential nature of many of the entries being carefully respected. A copy of the entries should be transmitted with the child to any other school to which he or she may go.

(*d*) Every School Medical Officer should make an annual report to the Local Education Authority on the

schools and children under his superintendence, which should be printed for facility of reference and in order that a supply of copies may be available for distribution among the members of the Authority and other persons interested. The Authority should send two copies of the report to the Board of Education as soon as possible after the end of the year under review.

(*e*) In order to secure effective bases for comparison of the work done in different parts of the country, one uniform year must be taken, the year to be adopted being in all cases the calendar year, in order to correspond with the annual period fixed for the closely related report of the Medical Officer of Health.

(*f*) The report should be concerned chiefly with the conditions and circumstances affecting the health of the children in the Elementary Schools of the district.

(*g*) It should also contain statistical records of the number of children examined and of those re-examined or under medical supervision; the nature and results of the examination; the number of visits paid to classes; the number and character of the diseased conditions found at certain age periods; particulars as to blind, deaf, defective and epileptic children; the medical advice given both as to the prevention of conditions inimical to health and the remedy of diseased conditions that may be discovered, action taken, and so forth.

(*h*) In addition to such records it will be well, as far as practicable, to make systematic comparisons of the individual and collective measurements and characteristics of the children in each school with standard and local records, both as a means of determining the condition of health of particular children or classes, for guidance in future action, and as part of the anthropometric survey to which this Act should contribute in due time. This part of the work, however, must be kept in a secondary position while so much remains to be

done in the elementary essentials of school hygiene. It is to those essentials, and the manner and degree in which they have been dealt with in his district, that each school medical officer should devote the major portion of his report.

Amelioration and Physical Improvement

14. The aim of this Act is practical and it is important that Local Education Authorities should keep in view the desirability of ultimately formulating and submitting to the Board, for their approval under section 13 (1) (b) of the Act, schemes for the amelioration of the evils revealed by medical inspection, including, in centres where it appears desirable, the establishment of school surgeries or clinics, such as exist in some cities of Europe, for further medical examination, or the specialized treatment of ringworm, dental caries, or diseases of the eye, the ear, or the skin. It is clear that to point out the presence of uncleanliness, defect, or disease does not absolve an Authority from the consequent duty of so applying its statutory powers as to secure their amelioration and to prevent, as far as possible, their future recurrence or development. The subject of specific medical treatment is, however, one which will require subsequent consideration in the light of the findings of medical inspection and the collateral issues raised thereby, and it is clear that, speaking generally, and subject to the observations in the following paragraphs, Local Education Authorities will be unable to formulate and submit for the Board's sanction any comprehensive scheme for the furtherance of this object until they have considered the results of their medical inspection in various directions.

15. In the meantime the Authorities should take measures without delay, for dealing, through such agencies as are conveniently available, with what are commonly, though in a sense erroneously, regarded as minor ailments. To such ailments, measures of amelioration should immediately be applied. In a broad sense all such amelioration is ' treatment '. Indeed, properly administered, the Act must become something more than a mere record of disabilities and defects. It opens the way to new means of education and lays upon

Education Committees duties involving 'treatment' in a broad conception of the term. A few instances will make the matter clear. Thus in controlling ringworm it has been open to a Committee (*a*) to neglect the disease altogether; (*b*) to adopt a policy of exclusion from school of affected children; or (*c*) to supervise or carry out some method of amelioration. Up to the present many Authorities have followed the first course. It is intended that in future they should, according to their abilities, adopt the third. Verminous heads and bodies form another illustration of a common condition in which amelioration can be secured by school nurses. Further, a careful survey should be taken of all available facilities for the promotion of the bodily cleanliness of school children. Wherever such facilities exist they should be utilized to the utmost, and where they are absent, the desirability, particularly in the more congested areas, of providing them, either in the schools themselves or at convenient centres, should be clearly recognized. It is of the utmost importance to remember that baths with the necessary accompaniments of soap, sponges, towels, &c., should be utilized, not merely for the immediate and obvious purpose of cleansing the bodies of the children, but also as a humanizing influence and as the means of inducing habits and instincts of cleanliness and of inculcating practical lessons in the value of personal hygiene and in self-respect. The same is true of such other simple practical matters as the daily brushing and cleansing of the teeth, which is a subject well worth careful treatment in many of our elementary schools.

16. Practical amelioration is already undertaken by Local Education Authorities in checking the spread of infectious disease by exclusion of affected or susceptible children, supervision and medical examination of 'contacts', disinfection of schoolrooms, and so on. Again, the modification of the teaching and work of the school and its adjustment to the physical capacity of the scholars is a form of 'treatment' which, in the end, will bear much fruit. Thus the defective visual acuity of children, particularly young children, calls for early correction at the instance of the Education Authorities either alone or in conjunction with some voluntary society; but the rational treatment of some of these children will as a rule be an educational modification which avoids the necessity of

spectacles, such modification for example as will diminish the prevalence of the bad habit of working the eyes at near distance, or ensure the adoption of suitable type of letterpress for the reader's eyes. Antecedent even to the discovery of such visual defects should come the removal, as the result of medical inspection, of unsatisfactory conditions of school life which are a common cause of fatigue and of injured eyesight. Obviously, such remedies are of greater importance to the eventual health of the community than the specific medical treatment of individuals.

17. Lastly, it must not be forgotten that Parliament itself has recognized the necessity of imposing some share of responsibility upon Education Authorities as to treatment in the broader sense in which the term is being used in this paragraph, by the special legislation provided in the Elementary Education (Blind and Deaf) Act, 1893, and the Elementary Education (Defective and Epileptic) Act, 1899. The powers conferred by these Acts are wide and furnish Authorities with the means of placing needy cases under special treatment. The Board of Education have approved in various county boroughs arrangements under the last-named Act, and in other districts the subject is receiving attention. Nor must it be forgotten that in respect of defective nutrition considerable powers have been conferred on Local Education Authorities under the Education (Provision of Meals) Act, 1906. In all questions relating to the practical means of amelioration and in some even affecting the arrangements for medical inspection, the Board are satisfied that the efficient local administration of the Act will depend in no small measure upon the good offices of School Managers, many of whom have already done so much in this sphere, and to whose interest and sympathy they cordially commend the new work.

B

EXTRACTS FROM CIRCULAR TO LOCAL EDUCATION AUTHORITIES

SCHEDULE OF MEDICAL INSPECTION

CIRCULAR 582

Board of Education,
Whitehall, London, S.W.,
23*rd January*, 1908.

4. In the accompanying Schedule the Board indicate the particulars, attention to which they regard as constituting the *minimum* of efficient medical inspection, and they consider that at least these particulars should be included in any other Schedule which the Local Education Authority may authorize for use in their Schools. It deliberately excludes many points of anthropometric or statistical interest which are worthy of attention, and which it is hoped may receive attention in suitable districts. Nor does it profess to lay down the lines of a clinical study or of a scientifically complete medical examination. It is intended to indicate the methods which, in the Board's opinion, should be followed and the particulars which should be attended to for the purpose of determining the fitness of the individual child for school life, to guide the Authority in adapting education to the peculiarities or abnormalities of the child, and to prepare the way for measures for the amelioration of defects in the child or its environment. . . .

It is considered that the inspection of each child should not occupy on the average more than a few minutes, and that the child need only, as a rule, have its clothes loosened or be partially undressed. Time may be saved in the actual inspection by the Medical Officer if the entries in some of the spaces are filled in by the school authorities before his visit. The four columns in the Schedule are designed for the four inspections required during school life.

With regard to items 17 to 24 of the Schedule, while it is

necessary that all indications of diseased or unsound conditions should be thoroughly investigated, needless medical examination of healthy children should, for obvious reasons, be avoided.

6. Where children are found to belong to that class of 'defectives' for whose education special provision is or ought to be made under the Statutes relating to such children, such cases should be made the subject of a special report to the Local Education Authority.

7. *All entries of the results of inspection in each individual case must be regarded as confidential.*

SCHEDULE OF MEDICAL INSPECTION

(*Accompanying Circular* 582)

Notes for Inspecting Officer

Reference Number of Note.

1. Date of birth to be stated exactly, date of month and year.
2. 'Other illnesses' should include any other serious disorder which must be taken into account as affecting, directly or indirectly, the health of the child in after-life, e. g. rheumatism, tuberculosis, congenital syphilis, small-pox, enteric fever, meningitis, fits, mumps, &c. The effects of these, if still traceable, should be recorded.
3. State if any cases of, or deaths from, phthisis, &c., in family.
4. Note backwardness.
5. Age to be stated in years and months, thus, $5\frac{4}{12}$.
6. Insufficiency, need of repair, and uncleanliness should be recorded (good, average, bad).
7. Without boots, standing erect with feet together, and the weight thrown on heels and not on toes or outside of feet.
8. Without boots, otherwise ordinary indoor clothes.
   Height and weight may be recorded in English measures if preferred. In annual report, however, the final averages should be recorded in both English and metric measures.
9. General nutrition as distinct from muscular development or physique as such. State whether good, normal, below normal, or bad. Under-nourishment is the point to determine. Appearance of skin and hair, expression, and redness or pallor of mucous membrane are among the indications.
10. Cleanliness may be stated generally as clean, somewhat dirty, dirty. It must be judged for head and body separately. The skin of the body should be examined for cleanliness, vermin, &c.; and the hair for scurf, nits, vermin, or sores. At the same time ringworm and other skin diseases should be looked for.

11. General condition and cleanliness of temporary and permanent teeth, and amount of decay. Exceptional features, such as Hutchinsonian teeth, should be noted. Oral sepsis.
12. The presence or absence of obstruction in the naso-pharynx is the chief point to note. Observation should include mouth-breathing; inflammation, enlargement, or suppuration of tonsils; probable or obvious presence of adenoids, polypi; specific or other nasal discharge, catarrh, malformation (palate), &c.
13. Including blepharitis, conjunctivitis, diseases of cornea and lens, muscular defects (squints, nystagmus, twitchings), &c.
14. To be tested by Snellen's Test Types at 20 feet distance (=6 metres). Result to be recorded in the usual way, e.g. normal V. $=\frac{6}{6}$ Examination of each eye (R. and L.) should as a rule, be undertaken separately. If the V. be worse than $\frac{6}{9}$, or if there be signs of eye strain or headache, fuller examination should be made subsequently. *Omit vision testing of children under* 6 *years of age.*
15. Including suppuration, obstruction, &c.
16. If hearing be abnormal or such as interferes with class work, subsequent examination of each ear should be undertaken separately. *Apply tests only in general way in case of children under* 6 *years of age.*
17. Including defects of articulation, lisping, stammering, &c.
18. Including attention, response, signs of overstrain, &c. The general intelligence may be recorded under the following heads:—(*a*) Bright, fair, dull, backward; (*b*) mentally defective; (*c*) imbecile. *Omit testing mental capacity of children under* 6 *years of age.*
19. Under the following headings should be inserted particulars of diseased conditions actually present or signs of incipient disease. The extent of this part of the inspection will largely depend upon the findings under previous headings.
20. Include heart sounds, position of apex beat, anæmia, &c., in case of anything abnormal or requiring modification of school conditions or exercises.
21. Including physical and clinical signs and symptoms.
22. Including chorea, epilepsy, paralyses and nervous strains and disorders.
23. Glandular, osseous, pulmonary, or other forms.
24. State particular form, especially in younger children.
25. Including defects and deformities of head, trunk, limbs. Spinal curvature, bone disease, deformed chest, shortened limbs, &c.
26. Including any present infectious, parasitical or contagious disease, or any sequelae existing. At each inspection the occurrence of any such diseases since last inspection should be noted.
27. Any weakness, defect or disease not included above (e.g. ruptures) specially unfitting child for ordinary school life or physical drill, or requiring either exemption from special branches of instruction, or particular supervision.

Schedule of Medical Inspection.

I.—Name_____ Date of Birth [1]_____

Address_____ School_____

II.—Personal History:

(*a*) Previous Illnesses of Child (before admission).

Measles.	Whooping Cough.	Chickenpox.	Scarlet Fever.	Diphtheria.	Other Illnesses.[2]

(*b*) Family Medical History (if exceptional).[3]

——	I.	II.	III.	IV.
1. Date of Inspection				
2. Standard and Regularity of Attendance.[4]				
3. Age of Child [5]				
4. Clothing and footgear [6]				
[III.—*General Conditions.*]				
5. Height [7]				
6. Weight [8]				
7. Nutrition [9]				
8. Cleanliness and condition of skin [10]				
Head				
Body				
[IV.—*Special Conditions.*]				
9. Teeth [11]				
10. Nose and throat [12]				
Tonsils				
Adenoids				
Submax. and cervical glands				
11. External eye disease [13]				
12. Vision [14]				
R.				
L.				
13. Ear disease [15]				
14. Hearing [16]				
15. Speech [17]				
16. Mental condition [18]				
[V.—*Disease or Deformity.*] [19]				
17. Heart and circulation [20]				
18. Lungs [21]				
19. Nervous system [22]				
20. Tuberculosis [23]				
21. Rickets [24]				
22. Deformities, Spinal Disease, &c.[25]				
23. Infectious or contagious disease.[26]				
24. Other disease or defect.[27]				
Medical Officer's initials				

General Observations. Directions to Parent or Teacher.

C

EXTRACTS FROM CIRCULAR TO LOCAL EDUCATION AUTHORITIES

CIRCULAR 596, 17TH AUGUST, 1908.

(*Supplementary to Circulars* 576 *and* 582.)

Circular concerning :—

(A) The functions of the ' School Medical Officer ' ;
(B) Provision for Medical Inspection of school children under the Code of 1908 ;
(C) The Local Education Authority's Annual Report of Medical Inspection to the Board of Education ; and
(D) Arrangements for attending to the Health and Physical Condition of School Children.

A.—*School Medical Officer.*

2. It will be observed that the ' School Medical Officer ' of the Local Education Authority is for the first time recognized in the Code of 1908 as an officer having specific functions in the system of Public Elementary Education. This Officer is defined in Article 44 (*g*) as ' a medical officer named by the Local Education Authority, and recognized as such by the Board.' The functions specifically assigned to him (or her) by the Code are—

(i) Those of reporting on the working and effect of any arrangements made under Article 44 (*g*) for educating children at ' an open-air school, school camp, or other place selected with a view to the improvement of the health and physical condition of the children '.
(ii) The power of advising or approving the closure of a school under Article 45 (*b*).
(iii) The power of authorizing the exclusion of certain children from a school on specified grounds under Article 53 (*b*), which grounds will be regarded as ' reasonable grounds ' under Article 53 (*a*).

3. One of the objects which the Board had in view in introducing these provisions into the Code was to secure that the responsibility for dealing with certain medical questions connected with Public Elementary Schools should, as far as possible, be placed in the hands of a single officer responsible to the County Council, County Borough Council, Borough Council or Urban District Council who are the Local Education Authority for the area in which a school is situated. The expression 'School Medical Officer' is therefore substituted for the vague expression 'medical authority', which was used in Article 45 (*b*) of the Code of 1907. The Board, however, also had in view the desirability of assisting Local Education Authorities to concentrate and organize, in the department of the School Medical Officer, all matters of school hygiene, including medical inspection under the Act of 1907, and they assume that the School Medical Officer will, in addition to performing the specific functions assigned to him by the Code, also be made responsible by the Local Education Authority for supervising and controlling the general work of medical inspection. . . .

But it is considered very important by the Board that a single individual should be charged with the organization and control of the whole machinery of the School Medical Service and that he should be in a position to take responsibility for the acts of all persons taking part in the work, including those of Assistant Medical Officers, School Nurses, Attendance Officers, and Teachers, so far as they perform any functions in connexion with the School Medical Service. . . .

B.—*Provision for Medical Inspection.*

4. As regards Articles 25 (*c*) and 58 (*b*), which require, as a condition of Grant, that satisfactory provision for the medical inspection of children shall be made, it is obvious that the best evidence of compliance with this condition would be afforded by (*a*) the appointment in each area of a competent School Medical Officer and a staff of qualified and suitable assistants under his supervision and control, and (*b*) the initiation of a carefully considered scheme for covering the ground. For this purpose the Board will require to be furnished with particulars of the appointments made

by the Local Education Authority and with such information as will enable them to judge of the efficiency of the organization adopted. Forms to be used for this purpose have been prepared and accompany this Circular (Form 9 M.I.). When this information is received, the Board will consider the system adopted in each area broadly and on its merits, with due regard to local circumstances and with no desire to impose a rigidly uniform system on Authorities whose circumstances are widely different. Even in cases where the system adopted is not such as the Board would themselves have suggested, they would be slow to withhold provisional approval from experiments so long as they do not conflict with the general principles laid down in Circular 576.

C.—*Annual Report.*

5. The Annual Report referred to in paragraph 13 (*d*) to (*h*) of Circular 576 should be made by the School Medical Officer to the Local Education Authority, who will send two copies of it to the Board of Education, with any observations which they may desire to submit, as soon as practicable after the expiration of the year to which it relates. It will be understood that Reports which are for the information of the Board of Education may well include statements of local circumstances and conditions which would be superfluous if they were intended only for the information of the Local Authority. The Annual Report should relate to the calendar year, and the first Annual Report should be made up to the 31st December, 1908. It is not the intention of the Board to prescribe in detail the form which this Report should take, or to require at present the adoption of particular methods of analysing and tabulating the facts on which it is based. . . .

6. As regards the scope of the Report, however, the Board consider that it is desirable that it should deal with the whole subject of School Hygiene, and should cover as much as possible of the ground indicated under the following heads. . . .

(*a*) General review of the hygienic conditions prevalent in the Schools in the area of the Local Education Authority in respect of such matters as surroundings, ventilation, lighting, warming, equipment, and sanitation, including observations on the type and condition of sanitary conveniences and

lavatories, water supply for washing and drinking purposes, the cleanliness of schoolrooms and cloakrooms, arrangements for drying children's cloaks and boots, and the relation of the general arrangements of the School to the health of the children.

(*b*) General description of the arrangements which have been made for the co-relation of the School Medical Service with the Public Health Service and for the organization and supervision of medical inspection, and an account of the methods of inspection adopted, including—

(i) A statement of the extent (if any) to which the Board's Schedule of Medical Inspection has not been followed and the reasons for such departure;

(ii) A statement showing the assistance given to the School Medical Officer and his assistants by nurses, managers of schools, teachers, attendance officers or other persons;

(iii) A statement showing the methods adopted for securing the presence of parents at the inspection and their co-operation in the subsequent treatment of defects, together with a review of the effect of such methods;

(iv) The extent to which disturbance of school arrangements was involved by the inspection. (Art. 43 (*b*) and 44 (*h*) of Code of 1908.)

(*c*) General statement of the extent and scope of the medical inspection carried out during the year, including—

(i) The number of visits paid to Schools and Departments;

(ii) The principle on which children have been selected for inspection; (at entrance, before leaving, by selection according to ages or otherwise);

(iii) The number of children inspected (classified for age at date of inspection and for sex);

(iv) The number of children referred for subsequent or further examination;

(v) The number of children in respect of whom directions were given for treatment of defects, including a classified statement of such defects;

(vi) The average time per head occupied by inspection

(*d*) General view of the facts disclosed by medical inspection, under the headings contained in the Schedule to Cir-

cular 582, including tables showing the height and weight of children inspected (according to age at date of inspection and sex).

(*e*) General review of the relation of home circumstances and social and industrial conditions to the health and physical condition of the children inspected, so far as facts bearing on this point have come under notice.

(*f*) Review of the methods employed or available for the treatment of defects, such as defective eyesight, carious teeth, nasal obstruction or adenoids, tonsillitis, discharging ears, pediculosis, ringworm, and other skin diseases, including an account of the action of school nurses in obtaining or assisting in the treatment of such defects.

(*g*) Review of action taken to detect and prevent the spread of infectious diseases, including reference to action taken under Articles 45 (*b*), 53 (*b*), and 57 of the Code of 1908.

(*h*) Review of the methods adopted and the adequacy of such methods for dealing with blind, deaf, mentally or physically defective and epileptic children under the Acts of 1893 and 1899.

(*i*) Review of—

(i) The methods and results of instruction in personal hygiene and temperance in the Public Elementary Schools in the area ;

(ii) The methods and results of physical or breathing exercises in the Schools ;

(iii) Arrangements for open-air schools, school camps, &c., under Article 44 (*g*) of the Code of 1908.

(*j*) Account of miscellaneous work, such as the examination of Scholarship candidates, Pupil-Teachers, or teachers of any grade.

Two complete sets of any forms used by the Local Education Authority in connexion with the School Medical Service should be sent to the Board together with the Report.

D.—*Arrangements for Attending to the Health and Physical Condition of School Children.*

(a) *Improvement of the School Arrangements.*—The School Medical Officer will doubtless furnish the Local Education Authority with valuable advice as to improvements which

can be made in the use of old school premises and in the design of new school premises for improving the health of the children educated in them. For instance, he will note and report to the Authority cases in which the ventilation of schools is defective, either as regards the means provided or as regards the use and maintenance of those means, and, if necessary, he will supply them with the results of scientific tests. He will, of course, call attention to the physical effects of bad ventilation, such as the prevalence of headaches, lassitude, and debility among the scholars, when they come under his notice. He will observe and report instances of bad positions in sitting and unsuitable design of desks or benches. As regards cases of defective eyesight, he will indicate such measures as can be taken to remedy or mitigate the defects by altering the position of the children in the class, or improving the lighting of the school in amount or direction, and he will call attention to the strain imposed on eyesight by the use of too small type in textbooks, the teaching of very fine sewing, &c. He will also be able to estimate the effectiveness of lessons on the subject of personal hygiene given in the school, and may be able to suggest improvements in the curriculum or in the methods of giving such lessons and bringing their importance home to the children. He may also be able to institute comparisons between school and school in respect of the effect of physical exercises, and, in the case of children of weakly physique, he may be able to indicate the kind and amount of physical exercises which are suitable for them. He will observe the effect of holding classes in the open air, and call attention to cases in which the adoption of this arrangement is desirable. He will also be able to suggest to what extent and in respect of what children advantage should be taken of the facilities afforded by Article 44 (*g*) of the Code of 1908 for improving the health and physical condition of the children, by means of open-air schools, school camps, &c., and, in cases where facilities exist for baths and swimming, he will sometimes find occasion to recommend a more extensive use of such facilities. And the beneficial influence of the School Medical Officer will not be exhausted even when he has done everything included in this formidable catalogue. The mere fact that the services of a specially skilled officer and staff are devoted by the Local Education Authority to the oversight

of all matters affecting the health of the children in their Public Elementary Schools gives to the whole question of school hygiene a dignity and importance which cannot but produce a considerable effect on the minds of teachers, parents and children alike. From this point of view the School Medical Officer should be not merely a functionary charged with specific duties, but a pervading influence making, in the long run, for better hygienic conditions in the school and in the home.

(b) *Exercise of Powers under Special Acts relating to School Children.*—Medical inspection will probably indicate the necessity of having recourse to the Blind and Deaf Children Act, 1893, and the Defective and Epileptic Children Act, 1899, in the case of a considerable number of children who are at present educated in ordinary Public Elementary Schools. It will emphasize the desirability of taking advantage of the wide scope of the last-mentioned Act by establishing or contributing to the establishment of special schools or classes for physically as distinguished from mentally defective children. It will also furnish the Local Education Authority with valuable information as to the necessity of exercising their powers under the Education (Provision of Meals) Act, 1906, and as to the best methods and effects of such exercise. It is extremely desirable that the School Medical Officer should be closely associated with this last-mentioned work wherever it is undertaken, though it is of hardly less importance that the methods adopted should be such as will secure the greatest educational effect in respect of the manners and conduct of the children concerned, as well as the best physical results.

(c) *Co-operation with the Sanitary Authority.*—It is obvious, as regards infectious diseases, that a School Medical Officer who is occupied in carrying out a programme of systematic medical inspection in the schools of the area will often be unable to dislocate his programme in order to deal personally with an outbreak of infectious disease in a particular school. He must so organize his machinery that both he and the Sanitary Authority shall receive immediate information of any such occurrence (whether the disease is ' notifiable ' or not) by duplicate notices or otherwise, so that the matter may be dealt with effectively and without confusion at the earliest possible moment. Definite regulations should be made for this

purpose. Where the School Medical Officer is himself the Medical Officer of Health of a Sanitary Area no difficulty will arise, but where this is not the case it must be remembered that the ultimate responsibility for preventing the spread of infectious disease must remain with the Sanitary Authority, which is at present the sole repository of compulsory powers for closure of Public Elementary Schools of all kinds, or for exclusion of individual children from them.

(d) *Advice or Direction to Parents.*—Where medical inspection reveals any defect or malady in a particular child, the first step will naturally be to notify the parents. . . .

(e) *The School Nurse.*—A School Nurse is capable of performing very useful and important functions, both in assisting in the work of medical inspection, and (under medical instructions) in applying, or showing the parents how to apply, remedies for minor ailments. . . . So far as the School Nurse can be regarded as assisting in the work of medical inspection, the sanction of the Board to her employment is not required. So far, however, as she is engaged in treating the minor ailments, or in visiting the children's homes for purposes of advice, her employment would require sanction as an 'arrangement' for attending to the health and physical condition of the children. The Board would usually have no difficulty in sanctioning any well-considered scheme for this purpose.

(f) *Provision of Spectacles, &c.*—In cases where medical inspection shows that the provision of spectacles is necessary for the treatment of defective eyesight, the Board will be prepared to consider proposals from a Local Education Authority to provide suitable and inexpensive spectacles free of charge. . . .

(g) *Contributions to Hospitals, Infirmaries, Dispensaries, &c.* . . . The Board will be prepared to entertain proposals for contributing to the funds of hospitals, dispensaries, and nursing associations, on terms of adequate advantage. Such contributions are specially desirable in the case of Eye Hospitals and Cottage Hospitals which are prepared to undertake minor surgical operations.

(h) *School Clinics.*—School Clinics may serve two purposes. They may be used for further and more scientific *examination* of cases in which medical inspection has indicated the existence of defects in a child which cannot conveniently be investi-

gated on the premises of an ordinary Public Elementary School. For instance, the School Medical Officer may discover at his first inspection that a child is affected in respect of one or more of the particulars numbered 17 to 24 on the Schedule accompanying Circular 582, and it may be necessary for him to ascertain by further examination whether the child is fit to continue in attendance at a Public Elementary School, or whether any special precautions should be taken in the case of such a child if he continues to attend, or whether special provision should be made for his education in some other manner. Similarly, in the case of ocular defects, the detailed examination of the child may often be more expeditiously and thoroughly carried out at a School Clinic, where special appliances are available. So far as a School Clinic is used for such purposes, its establishment appears to fall within the scope of provision for medical inspection, but such a clinic should not be used merely for the purpose of enabling the ordinary inspection of school children to be carried out elsewhere than at the schools which they attend, nor, in ordinary circumstances, will the Board be prepared to approve, for the purposes of Article 44 (*h*) of the Code, attendance at a School Clinic as an inspection centre.

The establishment of School Clinics for purposes of *treatment* of defects revealed by inspection gives rise on the other hand to questions of considerable difficulty, and, before sanctioning the establishment of a School Clinic as an 'arrangement' under section 13 (1) (*b*) of the Act, the Board will require to be furnished with detailed information as to the methods and scope of the work which it is proposed to do. They will, in particular, require to be informed—

(i) what precautions the Local Education Authority will take to secure that only those children shall be treated in a School Clinic for whose treatment adequate provision cannot otherwise be made, whether by the parents or by voluntary associations or institutions, such as hospitals, or through the agency of the Poor Law ;

(ii) what precise diseases and defects will be treated ;

(iii) by whom and on what terms and conditions the treatment will be carried out and what will be its extent ;

(iv) what is the estimated cost of the clinic in respect of buildings and equipment, maintenance and administration, and treatment, and how it is proposed to meet this cost, out of the rates or otherwise.

D

CHILDREN ACT [8 EDWARD VII]

Cleansing of Verminous Children.

Section 122.—(1) A Local Education Authority may direct their Medical Officer or any person provided with and, if required, exhibiting the authority in writing of their Medical Officer, to examine in any Public Elementary School provided or maintained by the Authority, the person and clothing of any child attending the school, and if on examination the Medical Officer, or any such authorized person as aforesaid, is of opinion that the person or clothing of any such child is infected with vermin or is in a foul or filthy condition, the Local Education Authority may give notice in writing to the parent or guardian of, or other person liable to maintain, the child, requiring him to cleanse properly the person and clothing of the child within twenty-four hours after the receipt of the notice.

(2) If the person to whom any such notice as aforesaid is given fails to comply therewith within such twenty-four hours, the Medical Officer or some person provided with and, if required, exhibiting the authority in writing of the Medical Officer, may remove the child referred to in the notice from any such school, and may cause the person and clothing of the child to be properly cleansed in suitable premises and with suitable appliances, and may, if necessary for that purpose, without any warrant other than this section, convey to such premises and there detain the child until the cleansing is effected.

(3) Where any Sanitary Authority within the district of a Local Education Authority have provided, or are entitled to the use of, any premises or appliances for cleansing the person or clothing of persons infested with vermin, the Sanitary

Authority shall, if so required by the Local Education Authority, allow the Local Education Authority to use such premises and appliances for the purpose of this section upon such payment (if any) as may be agreed between them or, in default of agreement, settled by the Local Government Board.

(4) Where, after the person or clothing of a child has been cleansed by a Local Education Authority under this section, the parent or guardian of, or other person liable to maintain, the child allows him to get into such a condition that it is again necessary to proceed under this section, the parent, guardian, or other person shall, on summary conviction, be liable to a fine not exceeding ten shillings.

(5) Where a Local Education Authority give notice under this section to the parent or guardian of, or other person liable to maintain, a child, requiring him to cleanse the person and clothing of the child, the authority shall also furnish him with written instructions describing the manner in which the cleansing may best be effected.

(6) The examination and cleansing of girls under this section shall only be effected by a duly qualified medical practitioner or by a woman duly authorized as hereinbefore provided.

(7) For the purposes of this section 'Medical Officer' means any officer appointed for the purpose of section 13 of the Education (Administrative Provisions) Act, 1907.

E

REPORT OF THE INTERDEPARTMENTAL COMMITTEE ON PHYSICAL DETERIORATION

Part III. Summary of Recommendations.

(3) *Advisory Council.* The Committee are emphatic in recommending the creation of an Advisory Council, representing the Departments of State, within whose province questions touching the physical well-being of the people fall, with the addition of members nominated by the medical corporations and others, whose duty it should be, not only to receive and apply the information derived from the Anthropometric Survey and the Register of Sickness, but also to advise the Government on all legislative and administrative points

concerning public health in respect of which State interference might be expedient; and to them might be remitted for consideration and report all the problems affecting public health which the requirements of a complex social organization are constantly bringing to the front. Such a Council, the composition of which might be modelled to some extent on *Le Comité Consultatif d'hygiène publique de France,* would be, the Committee believe, of great assistance, especially to the Local Government Board, and would be calculated to supply the knowledge and stimulus which are necessary in order to give to the Public Health side of the Board's administration a prominence which the multiplicity of its other functions may have tended to obscure, and to attract to its work that measure of public interest and support which has perhaps been lacking hitherto.

F

Memorandum on School Closure and Exclusion of Children for Infectious Disease.

APPENDIX III

FORMS AND SCHEDULES[1]

Referred to in text (Chapter XIII)

[No. 1

_____ *School.* _____ *Dept.*

LIST OF CHILDREN TO BE PRESENTED TO THE SCHOOL DOCTOR, AT HIS WEEKLY OR FORTNIGHTLY VISIT.

Name of Child.	Age.	Standard.	Why presented.	Doctor's Remarks.

[1] NOTE.—In this appendix are included some of the forms originally adopted by the London Education Committee, but so far not in common use by other authorities.

[No. 2

_____ *School.* _____ *Department.*

Environment of School.	
Building.	
Sanitation.	
Artificial lighting.	
Window lighting.	
Heating.	
Ventilation.	
Desks, seating, &c.	
General.	

Nurse's Report for week ending _____ 190 .

School.	Dept.	Date of visit.	Number of children examined.	Verminous cases.			Neglected and dirty.	Cases of ring-worm.	Visits to homes.	Remarks on special cases.
				Heads.	Nits.	Bodies and clothing.				

_____ *School Nurse.*

[No. 4

SCARLET FEVER RETURN TO ILLUSTRATE CLASSROOM DISTRIBUTION.

_____School.

_____Sanitary District.

190 .

Department.	Date of Analysis.	Classroom. A			B			C			Notes.
		Age.	Cases.	Date of last attendance.	Age.	Cases.	Date of last attendance.	Age.	Cases.	Date of last attendance.	

[No. 5

RETURN OF CASES OF MEASLES TO INDICATE CLASSROOM DISTRIBUTION.

_____*School.* _____*Department.*

Classroom.	Age.	Date of Analysis.			Date of Analysis.		
		Cases.	Last Attendance.	Total.	Cases.	Last Attendance.	Total.
A							
B							
C							

[No. 6

Notice to	*From*
The Parent or Guardian of	The Head Teacher (Infants' Dept.),
_____	_____ *School.*

As a case of measles has occurred among the scholars in the class which your child attends, it is possible that.....may have contracted the disease. As it requires about twelve days for measles to develop after infection, you are requested to pay particular regard to the state of your child's health during the NEXT THREE WEEKS, and upon the slightest sign of illness to abstain from sending.....to school.

Date _____ _____

Signature.

NOTE.

Measles may be a very serious illness in young children, and many die from it. The early symptoms are those of a cold, which may be at first slight; there is generally running at the eyes and nose, sneezing and possibly cough. Many children lose their lives because parents allow them to go out of the house, thinking that the indisposition is only a slight cold, when it is really measles.

[No. 7

Notice to	*From*
The Parent or Guardian	The Head Teacher Dept.,
_____	_____ *School.*

Diphtheria being present in the district, and your child having exhibited some symptoms of the disease, namely, sore throat, you are requested, in the interests of your own child and of the other children, to keep.....at home. A medical certificate, *based upon bacteriological examination*, stating that.....is free from infection, should be obtained before presenting the child for re-admission to school.

This certificate can be obtained, free of cost, from the Medical Officer of Health for the district by those who have no private doctor.

Show this card to the doctor.

Date _____ _____

Signature.

[No. 8

NOMINATION FORM FOR PHYSICALLY DEFECTIVE CHILDREN.

This form should be filled up and forwarded to the Medical Officer (Education), Education Offices, Victoria Embankment, W.C.

[*Children* UNDER FIVE *should not be nominated for admission to a Special School.*]

This space is for Head Office use.

*No.*_____

1. Name of child.	
2. Address in full.	
3. Date of birth.	
4. How long has the child attended (*a*) this School ? (*b*) any other School ?	 (*a*) (*b*)
5. What is the mental capacity of the child ? (*a*) Reading. (*b*) Writing. (*c*) Calculation.	 Equal to Standard _____ ,, ,, _____ ,, ,, _____
6. For what reason is the child sent up for medical examination ?	
7. Does attendance at an ordinary school appear prejudicial ? If so, in what way ?	
8. Does the child suffer from fits ? If so, have they occurred frequently or in school ?	
9. Is any near relative, dead or living, known to have suffered from Insanity, Fits, Gout, Spitting of Blood, Consumption, Scrofula, or any other hereditary disease ?	
10. Remarks.	

MEDICAL OFFICER'S NOTES.

Signed_____

School_____

Department _____

Date _____

[No. 9

NOMINATION FORM FOR MENTALLY DEFECTIVE CHILDREN.

This form should be filled up and forwarded to the Medical Officer (Education), Education Offices, Victoria Embankment, W.C.

[*Children* UNDER FIVE *should not be nominated for admission to a Special School.*]

N.B.—In filling up this form avoid general terms such as 'fair,' 'moderate,' &c., and say in the simplest terms what a scholar can do.

This space is for Head Office use.

*No.*_____

1. Name of child.
2. Address in full.
3. Date of birth.
4. How long has the child attended
   (*a*) this School ?
   (*b*) any other School ?
5. What is the appearance of the child—Stupid or bright ?
6. Is the child : 1. Obedient ; 2. Mischievous ; 3. Spiteful ?
7. Are the habits of the child correct and cleanly ?
8. Are the propensities of the child peculiar or dangerous ?
9. What is the mental capacity of the child ?
   1. Observation.
   2. Imitation.
   3. Attention.
   4. Memory.
   5. Reading (Equal to Standard).
   6. Writing ,, ,,
   7. Calculation ,, ,,
   8. Colour.
   9. Special Tastes.
10. Is the child affectionate or otherwise ?
11. Has the child any moral sense ?
12. Have you any other information bearing on the case ?

MEDICAL OFFICER'S NOTES.

Head Teacher_____

School_____

Department_____

Date_____

[No. 10

MEDICAL REPORT UPON DEFECTIVE CHILD

(After Admission to Special School).

Name (in full)

1. GENERAL ASPECT AND EXPRESSION—

2. PHYSICAL STATE—
   General health and nutrition.
   Congenital deformities.
   Any physical or nervous peculiarities.

3. MENTAL STATE—
   Response—slow or ready.
   Educational attainments.
   Speech.
   Reading.
   Calculation.
   Writing. Manual.
   Peculiarities.

4. DIAGNOSIS—
   Line of Training Indicated.

SHEFFIELD EDUCATION COMMITTEE.

_____ *School.* _____ *Department.*

The undermentioned children, who have been examined by the School Medical Officer and found by him to be suffering from physical defects, have not yet received any treatment . . .

Name.	Address.	Parent or Guardian.		Treatment required for	
		Name.	Occupation.		

(*Signed*) _____

_____ 190 . Head Teacher.

INDEX

NOTE: *In this Index* "Medical Inspection" *is used as synonymous with* Medical Inspection of School Children.

In the same way Child, *or* Children, Scholar, *or* Scholars, *is used instead of* School-child, School-children.

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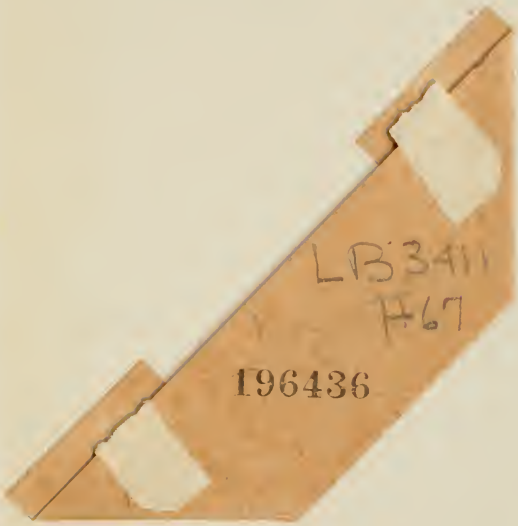
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